Teaching Young Kids with Old Computers

How to Run a Computer Camp

J. Eric Schonblom

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Introduction

Look about and you will see lots of children. Ask about and you will find old computers gathering dust in closets. Put them together, and you have the basis for an inexpensive computer day camp. It is easy, it is fun, and you don't need to be a computer expert to do it.

Who might be interested?

Schools. More and more schools are holding summer sessions, less for traditional academic reasons than to meet an increasing need for child care. Such schools will find in this book a model for educating and entertaining children without spending a great deal of money.

Churches. Churches that hold annual vacation Bible schools will find an inexpensive and appealing structure to make this summer's experience different and more exciting. Churches that haven't held a Bible school before will find an easy way to start one.

Clubs. Civic clubs and other organizations can obtain new members and serve current members by providing an enjoyable learning experience for their children.

Computer owners. Teachers and parents with older computers will find reviews of scores of programs, old and new, together with the names, addresses, and phone numbers of places where programs, even for older computers, may be obtained.

What Is Needed for a Computer Camp?

Kids. You need a bunch of kids with time on their hands during the summer or on weekends during the school year. I invite children in the 7 to 12-year-old range, but kindergarten lids love computers, too, while teenagers will sit in front of a computer screen for hours at a time. My program is aimed at

campers who do not have a computer at home. If your audience is in an affluent suburb, you'll need a curriculum more specialized than mine, but the structure can be the same.

Staff: A counselor, a nerd, and a couple others. You need an adult who likes children and has the trick of discipline. It helps if this adult knows something about computers, but that is not necessary. There are teenagers at your high school who eat, sleep, and dream computers. A summer job using computers is their idea of heaven, so hire one. You may not even have to pay him (or her). Now the adult in the computer room only has to manage the children. The teenager will handle the hardware. Actually, my "nerds" have been well adjusted youngsters who worked as well with kids as I did. You don't have to have anyone else, but if there are more adults available, double the size of your camp and let them handle crafts and recreation. There is an appendix in this book with job descriptions. Cooks and drivers are good, too, but not essential.

Equipment. Since this is a computer camp, you had better have at least one computer. You can manage with just one, and the book will tell you how, but all those folks who are buying new computers are putting old ones on shelves, so look around. You'll be surprised how easy it is to acquire a computer as a gift or loan. There is some advice in this book about where to buy things.

Programs. For my first computer camp, I wrote my own programs. You can write your own **HyperCard** stacks (yes, you can!), but if programming isn't your cup of tea, you will be relieved to hear there are thousands of programs that can be downloaded from online services or purchased for peanuts, and the book will help you do that. As time goes by, you'll acquire software, and, eventually, it will run you out of your storage facility. If you have an Apple II, you can even use the disk that comes with this book.

Facility. You will need a place to hold your camp, preferably one with good security, since you will be storing borrowed computers there. One reason this book is directed toward schools, churches, and clubs is that they often have appropriate facilities for a camp. You must have a computer room, restrooms, and a place for children to play when they aren't using the computers. If you have something like a swimming pool., you should use it!

Transportation. Perhaps you have parents who will bring their kids to you and take them home afterwards. Lucky you! I go to get mine. It gives me informal time with the children, daily opportunities to talk to parents, control over who attends which camp, and assurance that the kids who need the camp the

most will be able to get to it. Offering transportation means finding vehicles and drivers, but schools and churches often have the means to do this.

Food. Feed your kids. A five-hour camp that includes a morning snack and a hot lunch is much more attractive than a two-hour session in a computer room. If you work with disadvantaged children, as I do, the federal government will pick up the tab. That's hard to beat. Look for details in the book.

Money. We reach from 120 to 150 children each summer, operate four or five two-week camps, and get by on about $850 per week for out of pocket expenses. Part of the trick is hiring good people at minimum wage, one of the few advantages of living in an economically deprived area with high unemployment. I also use dependable volunteers and, as mentioned above, federal reimbursement for snacks and meals. Parents are asked to contribute $10 for the first child and $5 for each additional child from the same household. Some do this, and we receive about $600 annually from parents. I make a personal contribution, and my sponsors pay the rest. After the first year, I have never had a problem paying bills.

Why Run a Computer Camp?

Overcoming school phobias. Kids like computers, and they will even go into a school to use them. Having enjoyed camp at the school during the summer, they come back in the fall with a more positive attitude, especially if their new teacher was involved in the summer camp.

Overcoming phobias about math or other subjects. My campers spend over half their time using educational software under the delusion that they are having fun. Success with math, writing, or science at the computer lends the child confidence when he or she encounters the same subject later in the school year, especially if the class uses any of the same programs. "Oh," they say in surprise, "Is that all? I can do that!"

Computer literacy. Parents frequently tell me how important it is that their children learn how to use a computer. I certainly agree that kids should be able to go to a computer, software in hand, and use it without damaging either the software or the computer. Incidentally, teachers who had initial reservations about allowing a computer in their classroom were relieved considerably to find that their children already knew how to use it.

Social Value. Computers are inclusive and provide what educators call a "least restrictive environment." My camps are attended simultaneously by ordinary children (all children are extraordinary, but...) and by those with severe mental or physical handicaps. It's no hassle to be inclusive, and everyone benefits. Free transportation, meals, and the absence of tuition also reduce economic barriers. Computers are oblivious of social and personal differences, and when a program is too easy or too challenging, it is easy to substitute a new level or a new program.

Human Values

This book isn't fiction. I am real, our camps are attended by real children and supervised by real adults. Occasionally something interesting or amusing happens in our real community. If the event is worth retelling, I've added it to the book, rather like the incidents that appear at the ends of stories in the *Readers' Digest*. I think you'll learn something from them, too. Here's an example.

I stopped the van in front of the house and let out the girls. There was no sign of the family, and the colt wasn't at its usual place in the enclosure next to the road. The older girl, from where she stood on the grass, looked around the house and said, "Daddy's bathing the colt." The younger girl ran to see and shouted with delight, "No, Daddy's bathing Mommy!" Indeed, when the parents came around the corner, it was clear that the hot day had sparked a little horseplay with the water hose.

Yes, the verb here is "bath," not "bathe."

ORGANIZING A COMPUTER CAMP

What Are Kids to Get Out of This?

What is the point of a computer camp?

A computer camp can and ought to teach children about computers. Children at a computer camp are a captive audience, and camp sponsors can teach a number of other things as well, such as first aid, drug awareness, sexuality, singing, swimming, or religion. Children attending camp at a school will learn that schools can be fun. Parents get a two-week vacation from their kids, and learn more about the sponsoring organization.

Modern computers are so "user-friendly" that it is perfectly possible to use a computer for hours and learn little or nothing about computers; nevertheless, we expect computer campers to become computer literate. Specifically, they learn computer nomenclature (keyboard, disk drive...), how to handle a mouse or joystick, how to get a program running on a computer without damage to disk or computer, how to log off the computer without damage to either, a little bit about the disk operating system, and how to type in and save a program. There is nothing sacred about these objectives. Other computer camps can add or subtract from the list as they wish.

There is more to a computer camp than computers. An hour is about the maximum time that many children want to sit in front of a computer, so a computer camp must plan other activites. A sponsor with no specific agenda may simply offer crafts and recreation, but many sponsors have objectives of their own that are fostered by a computer camp. What follow are examples.

Summer School. A school wants to run a remedial math program during the summer, but encounters resistance from children and from some parents. If the math pill is sugar-coated with a computer camp, it may go down more easily. Computer programs like **Math Blaster** are much more fun than paper and pencil drills, and even pencil and paper drills become more acceptable if there is an hour of computer fun to follow.

Vacation Bible School. A church operates a computer camp in which two hours are spent daily with the computers, an hour is spent in outside recreation, and an hour is spent in Bible study. The computer programs may contain or emphasize moral or religious values.

Drug Awareness. A civic club sponsors a computer camp which includes one hour daily of live or taped instruction concerning the hazards of drug use. Guest lectures are provided by local agencies concerned with law enforcement, health instruction, or drug rehabilitation. A similar program might center on sex education. In programs like these it is essential that parents know in advance and approve what is planned.

Life Skills. There are many skills which can be taught in a two-week period in conjunction with a computer camp. Several that come to mind are learning to swim, first-aid, cheer-leading, ballet, and music lessons.

Publicity and Good Will. In addition to what is taught in the computer room, children and parents will learn that the camp sponsor cares about them. If a boy has fun at school during a summer computer camp, that experience will make him less reluctant to attend school in the Fall, particularly if the computer camp staff is drawn from school counselors and teachers. Children who make friends at computer camp will return to the sponsoring organization to see those friends again. A church that runs a computer camp for the community can expect to see some of the children afterwards in Sunday School.

Parental Involvement. If a sponsor goes to parents with an inexpensive and worthy program for their children, those parents will be more apt to respond the next time, and there is nothing like a successful camp to involve parents as cookie makers, carpool drivers, fund raisers, or group leaders for the next one. Once parents have helped with the computer camp, it is a short step to interesting them in other activities at the school, church, or club.

Child Care. An organization that wants to draw adults, especially single parents, to an extended event such as a convention, short course, or retreat should consider offering a computer camp for children during meeting hours. Not only does the computer camp provide child care, but the lure of the computers enlists the children in getting parents to meetings.

Which Kids Will I Go After?

What attention needs to be paid to age, gender, school grade, race, and disabilities among campers? None of these factors bar a camper from participation, but some need to be considered in planning programs.

Gender. In ten years of running computer camps for younger children, I have found that girls are somewhat more likely than boys to use a printer when it is available, but the differences between the genders are less striking than the similarities, and sex has little relationship to preference or proficiency in the computer room.

Diversity. Except for a short lesson at the beginning of each day, I do not recommend that all children work with the same program simultaneously. Consequently, the norm for an inexpensive computer camp is for each computer to be running a different program. The two great advantages of this philosophy are that each child (or pair of children) is operating at his or her own level and the camp need not purchase either site licenses or multiple copies of computer programs. Further advantages and disadvantages of this philosophy will be discussed later.

Ages Served. The choice of ages for computer campers is an arbitrary one. The camps I run enroll children from seven to twelve years old. Nearly all of the seven-year-olds are able to meet my minimum objectives, and most, but not all, of the twelve-year-olds still find interest in my curriculum. I don't enroll six-year-olds because most, although not all, are frustrated by the computer keyboard, have an inconveniently short attention span, and do not read well enough to use computer documentation or instruction screens. All of these are difficulties rather than obstacles, and an organization which needs to involve children younger than seven will find ways to do it.

I don't involve children over twelve years old because my camp runs in a small community where most of the thirteen year-olds have been to camp for up to six years already, and I prefer to use limited resources to reach additional children at risk in an economically deprived community. If I ran a computer camp in an affluent suburb, I would leave the younger children to their TV sets and teach computer skills such as programming and word processing to older children who could practice them on their own home computers.

A further consideration when enrolling older children in poorer neighborhoods is the expectation -- theirs and their parent's -- that they contribute to the household daily by earning money or by staying home to baby-sit, cook, and farm.

Age Mix. Because children choose their own programs at my camps, there is no problem when younger and older (or duller and brighter) campers are in the computer room simultaneously. In fact, the wider the range of abilities in the room, the further a limited inventory of computer programs will stretch to satisfy everyone. On the other hand, when children leave the computer room to engage in recreation or arts and crafts, the situation changes. A crafts project which interests a twelve-year-old may frustrate a seven-year-old, and ball games degenerate into shouting matches when seven-year-olds try to pitch to twelve-year-olds. In the long run, same-age groups function better than mixed groups.

Grade Mix. The advantages in sorting children by grade, rather than age, are outweighed by the disadvantages. I remember a 9-year-old who just learned that he would be repeating the third grade and wanted to know if he "had flunked computer camp" also. He was delighted to find that he would be grouped with many entering fifth-graders. There were plenty of programs "at his grade level" in the computer room, and he functioned better with children his own size on the outside.

Race. Race, like gender, needs to be considering in forming groups so that individuals can be comfortable in choosing partners for camp activities. It doesn't make sense to create camp groups which either isolate or segregate children by race. Ordinary sensitivity and common sense are required.

Disabilities. My camps have included deaf children, children with severe visual impairment, children institutionalized for emotional disturbances, children in orthopedic braces, deaf children, a girl in a wheelchair, and a mute autistic. As long as children can change programs, reduce levels, and turn computers off, their disabilities will not prevent them from enjoying and learning from computers. In one of my camps, a nearly blind seven-year-old had the highest score of all the younger children. A camp that wants to include children with handicaps will find the means to do it, and a computer room qualifies as a "least restrictive environment" for many children challenged by disabilities. A side benefit to enrolling handicapped children is the positive role played by their classmates and the pleasure these classmates experience in making friends with

someone who is "not so different, after all." I have heard a lot about the cruelty shown to children with disabilities. What I have seen, over and over, is the opposite.

Economic Status. If the sponsor expects poorer children to attend camp, scholarships must be available to cover costs, and transportation must be provided to and from the home. It is also helpful to provide snacks and meals, for which reimbursement may be possible through government programs. Don't make unreasonable demands upon family resources. For example, if you want to silk-screen T-shirts, you might ask each camper on Friday to bring a clean T-shirt on Monday, but you ought not to ask for a new T-shirt or to prescribe the color. The computer is a symbol of affluence and success to lower-class parents, and their children need to be enrolled as often as possible.

Repeaters. Since I enroll children aged seven to twelve every summer, children return to camp as often as six times. I have been gratified both by what they retain from the previous year and by their eagerness to learn something new. Children may not enroll in more than one 2-week camp during a given summer, but I do allow children to attend for one day during another camp if they are overnight guests and ride the bus with a current camper.

Computer Background. In planning my programs, I assume that the children have no computer background. Even my twelve-year-olds, who may have been to computer camp five previous years, hear familiar lessons about how to handle computer disks. Children to whom the instruction is new take longer to pass their competency tests, but in every case I'm assured that everyone knows, for example, that disks belong in envelopes and shouldn't be removed from disk drives when the disk-drive light is on.

Size of Camp. The size of the camp depends upon many things: the number of children in the community (180 to 220), the number of available computers (12 to 15), the number of available helpers (4 to 6), the number of persons who can be fed at one time (30 to 45), the number (2) and type (one 9-passenger van; one 13-passenger van) of transportation, the total time available for all camps (8 to 10 weeks), and the projected length of each camp (2 weeks). Your answers to these questions will differ from mine, which are in parenthesis. As a guide, I will indicate how I reached my numbers.

The number of children which might be served is, to some degree, an arbitrary number. To enroll students in my camps, I visit the homes of nearly every seven to twelve year old enrolled in the school where the camp is held. Our

school is located only two miles from a county line, and through cooperation of bus drivers and the principal of the neighboring school, the homes of two dozen children located just over that line are visited as well. A treatment center for emotionally disturbed children is one of the camp sponsors, and we enroll children under their care who are ready for the experience. We invite a significant number of children who visit the community to live with non-custodial parents, grandparents, or other relatives, home-schooled youngsters, and a small number of children with physical handicaps who spend the school year elsewhere, but return home during the summer holidays. We enroll the children of employees of the sponsoring organizations. Transportation to and from homes is offered to almost all of the children listed above. Finally, the camps are publicized in local newspapers, and parents in the wider community are invited to participate if they provide their own transportation.

Days, Evenings, Weekends... When?

Computer camps may be conducted in a variety of forms. These include residential camps, day camps, evening or after school programs, and weekends. A special case is the classroom with one or two computers to be used while other students are instructed or working on something else.

Residential Camps

Residential camps with an emphasis on computers came into vogue in the 1970's when computers were expensive, and more affluent parents wanted to provide their children with computer experience. As the cost of computers dropped, these children acquired home computers, and marketers of residential camps returned to traditional camp curricula. Where computer use remains on the camp schedule, it is only one of many camp activities, although the computer room will be similar to those in a day camp.

Residential camps for disadvantaged children, such as traditional "Fresh Air Camps," do not emphasize indoor activities, and computers, if available at all, are secondary in camp planning. Government sponsored Math or Science Camps, on the other hand, often have a strong computer emphasis. Since these camps depend upon the success of grant applications, they are frequently very well funded – or cancelled. Organizers of such camps are advised to award minigrants to a school or university for use of their computer facilities, rather than purchase hardware for one-time use. One such camp, for which I served a minor advisory role, operated for four weeks each of two summers serving sixty children, featured exciting overnight field trips to nearby cities, and had a budget of over $100,000. The government got fair value for its money, but few sponsors could afford their budget!

Day Camps

My summer program in Appalachia now serves 120 to 150 children, operates for eight to ten weeks annually, and costs the sponsors less than $8000. When I began in 1985, two other volunteers and I spent less than $500, mostly for food, on 32 children, operating for four weeks with a borrowed van and four computers. The day care format is inexpensive, provides flexibility in serving a diverse population, and makes optimum use of facilities and equipment.

So long as schools remain closed during summers and churches are closed on weekdays, they are obvious locations for computer camps, although a church computer room may need to be taken down before Sunday mornings and set back up late Sunday evenings. Both schools and churches can provide campers and volunteers, meeting rooms, audio-visual aids, adequate security, restrooms, and parking. Kitchens, dining facilities, and air-conditioning are common in both as well.

The choice of facility will influence the choice of operating hours. My camps start at 7:50 AM, because they run concurrently with summer school. In past summers, we began at 8:50 AM when summer school was not in session. Children get a snack on arrival. We have four hours of programming: two hours with the computer, and an hour each for recreation and for crafts. Sponsors may prefer other activities, from singing to first aid instruction, for the time spent outside the computer room. Originally I allowed an hour for lunchtime, because our meals were not served at the same facility that houses our computers. When the school began serving meals, we kept the full hour for lunch, and I use the second half hour to demonstrate software to younger kids while they eat a pop and candy bar after eating. Children ride vans for as much as an hour before and after camp to get from and to their homes.

The duration of a day-camp is up to the organizers. I recommend two-week camps, but I have also run one-week camps that lasted an additional ninety minutes and included three, rather than two, sessions in the computer room daily. Before rushing to double attendance by holding eight one-week camps instead of four two-week camps, sponsors should recognize that although the camping hours may remain the same, doubling the number of camps nearly doubles the amount of camp administration .

I can supervise as many as fourteen computers in the computer room when the computers are of the same type, even if they are running different programs. When I have two adults to help with the camp, I plan for three times as many children as I have computers. I have run camps with nine computers and two dozen children by myself, taking the children outside for recreation and crafts. Currently, with two adult (and three teenage) assistants, I invite forty children for each two-week camp, taking half in the computer room at a given time and splitting the remainder between the two adults. A variety of day camp schedules are included in the next section of this book, and there are still more in the Appendix.

Evenings or After School

Schools, churches, and organizations like Girls' Clubs may consider setting aside space for a permanent computer room to be used after school or in the evenings. Plan for one and one-half times as many children as computers and try to get a teenage assistant who likes computers. If attendance at an after-school camp is voluntary, you should begin each session with the demonstration of how a program is used, followed by free computer play, with each child choosing what to do. When I have more children than computers, children who volunteer to share a computer get to choose both their computer and their software before children who decline to have a partner.

Weekends or Short Courses

Young children have such short attention spans that they may get restless in a computer room in less than an hour, but motivated teenagers or adults may spend two hours at a computer without becoming bored. The key to running a successful weekend camp or short course is to provide variety. Designate specific times for "lessons" or VCR presentations, when the whole camp does the same thing simultaneously, follow these with loosely structured practice sessions, follow the practice sessions with programs that are pure fun, and follow the fun with a recess outside the computer room. Outside sessions with audiovisual aids, such as VCR presentations, are too much like computer sessions to serve as effective breaks.

The One-Computer Classroom

A teacher presented with a single computer for the classroom may cope by setting up a schedule where each student uses the computer at a designated time as a reward for completing other requirements. While some software is self-explanatory, much is not, and teachers may find themselves spending too much time assisting the one student at the computer. A solution is for the teacher to give a proficiency test on the computer to one student, followed by a session in which that student instructs another, who prepares a third student in turn. At some schools an adult volunteer or older student can provide this assistance. It is good economy and convenient for the teacher to limit the number of programs available, adding new programs from time to time and eliminating those that students no longer find interesting. Teachers may consider giving academic credit for more challenging programs or reducing computer time if it is used exclusively for arcade-type games.

Scheduling a Summer Day Camp

Daily scheduling depends upon how many children are served, how many computers are available, the number of adults working at the camp, and the length of the day. The schedules assume that children will divide their time between the computer room, recreation, and crafts with a snack on arrival and a break for lunch. An interval of three hours between snacks and lunches is required by certain federal programs, and this guideline has been observed. Whenever possible, recreation is scheduled for the morning and crafts for the afternoon to minimize outdoor activity under the summer sun. A sponsor-selected activity, such as a drug awareness program, could be substituted in these schedules for either recreation or crafts.

CAMP SIZE

Some indication of how many children can be handled with specific resources is given in Table I. Sponsors should assure that they are not attempting to work with more children than permitted by state and local ordnances. If more than 13 computers are available, consider splitting the computers to create two simultaneous computer camps with separate computer rooms.

TABLE I. RECOMMENDED NUMBER OF CHILDREN

Number of Adults	Number of Computers												
	1	2	3	4	5	6	7	8	9	10	11	12	13
1	8	10	10	12	12	12	12	12	12	12	12	12	12
2	8	10	10	12	14	16	16	18	18	20	22	24	24
3					15	18	21	24	27	30	33	36	39

NOTE: If there are fewer than five computers, two adults can conduct the camp. Additional adults are always helpful. A camp supervised by one adult should be conducted in a building where a second adult is available in emergencies.

SCHEDULING WITH ADEQUATE RESOURCES

My first computer camp, in 1985, utilized only four computers, which then cost over $2000 apiece with a few peripheral accessories. Used computer systems

are now inexpensive, and many sit unused in closets. Assume for the moment that your sponsor will be able to borrow as many computers as will be needed and you will have three adults on your staff.

The schedule I find most convenient is shown below, although you may choose to begin earlier or later than my start time.

Preferred Schedule

7:00 - 7:50	Transportation of children to camp
7:50 - 8:00	Snack
8:00 - 9:00	Older children in computer room; younger children divided with half in crafts and half in recreation
9:00 - 10:00	Younger children in computer room; older children divided between crafts and recreation
10:00 - 11:00	Same as from 8:00 to 9:00, but with younger children going to the opposite activities from before.
11:00 - 11:30	Lunch
11:30 - 12:00	Snack (opportunity to buy one soda and one candy bar at reduced prices); unstructured recess for the older children; demonstration of computer software to the younger children.
12:00 - 1:00	Same as from 9:00 to 10:00 with older children going to opposite activities
1:00 - 1:10	Assembly, if needed, for announcements
1:10 - 2:00	Transportation home

The same schedule is shown in block form in Figure 1. The groups in my camps are designated by colors: Blue (oldest), Green, Yellow, Red (youngest). The word Play before 7:50 is a reminder that parents may bring children early, and some buses may arrive before 7:50, drop off children, and leave to pick up others. Consequently, an adult will be needed to supervise unstructured play from approximately 7:20 to 7:50. An adult is also needed from 1:10 to 1:40 to supervise play if parents are late or all children cannot catch buses home simultaneously. Other designated activities are snacks (Snk), computer room(Comp), arts and crafts (A & C), lunch (Meal), computer demonstration (Demo), and structured recreation (Rec).

Time	8:00		9:00	10:00	11:00	Noon		1:00	
GROUP:									
Blue	Play	Snk	Comp	A & C	Comp	Meal	Snk Play	Rec	Play
Green	Play	Snk	Comp	Rec	Comp	Meal	Snk Play	A & C	Play
Yellow	Play	Snk	A & C	Comp	Rec	Meal	Snk Demo	Comp	Play
Red	Play	Snk	Rec	Comp	A & C	Meal	Snk Demo	Comp	Play

Figure 1. Preferred schedule with adequate resources

The schedule above utilizes a crowded computer room and encourages children to share computers, and it is the schedule I recommend. A number of alternative schedules are provided in the appendix. These include schedules that allow each child exclusive use of a computer by reducing the number of computer sessions and schedules for a variety of situations in which sponsors have fewer computers, fewer adult leaders, or less transportation than are required for a camp with adequate resources.

Sponsor Initiated Programs

Having indicated earlier that a computer camp provides a good vehicle for teaching or training children in areas of interest to a sponsor, I'd like to suggest ways in which this can be done.

The first requirement is that you not deceive parents about the objectives of your camp. If there is to be an emphasis upon drug awareness, sexuality, swimming lessons, or evangelism, to name a few possibilities that might arouse parental concern, the camp organizers are under a clear ethical obligation to say so. No volunteer activity for young children has any chance of success in the face of parental opposition.

Rather than speak in generalities, it will be easier to explain a program-specific computer camp by example.

Assume that a public elementary school has been selected by the local Board of Education as a primary teaching facility for young children with hearing impairments. The children with handicaps will spend a portion of the school day learning skills, such as American Sign Language, specific to their disability, but they will receive the rest of their education in the least restrictive environment, meaning that they will eat and enjoy recreation with the other children at the school and join them in certain classes as well. As preparation for the new center, the school decides that a summer computer camp would be an appropriate way to help hearing children respond appropriately to their new classmates in the Fall. What programs might the school consider within and outside the computer room?

COMPUTER ROOM ACTIVITIES

Software

It is probable that there will be software specific for any major area of concern chosen by a sponsor. For example, what programs might be used by hearing children to increase their awareness of and sensitivity toward classmates with a disability? Simple sign language comes immediately to mind, and there is a $59.95 program by EPSCO called Talking Hands which provides practice in finger spelling. Talking Hands is advertised by Learning Lab Software, 20301 Ventura Boulevard, Suite 214, Woodland Hills, CA 91364. A less expensive alternative is Finger Spell, which was published on Softdisk #89 and is available as a back issue for ten or eleven dollars from Softdisk Publishing, P.O. Box 30008,

Shreveport, LA 71130-0008. Persons concerned with helping those with hearing disabilities will know of other sources. The finger spell program would be used by both hearing and impaired children.

Shells

A shell is a program written by or with the assistance of a person having specialized knowledge in a specific area. The user still has the responsibility of asking the questions and filling in the blanks, but the shell then prepares the program used by the child. Both of the fingerspelling programs listed above can be used in this way. The teacher prepares a story that is saved by the computer and then presented to the child as sign language.

Creative Software

Creative software may be used on the theme chosen by the computer camp. Posters on hearing themes can be drawn from scratch using programs such as **Platinum Paint**, **AppleWorks GS**, or **Beagle Draw** or created quickly with the assistance of **Print Shop**, **Writing Center**, or **Newsroom**. Children might be asked to imagine what the world would be like if it were silent and to write a poem on a word processor describing that world.

Computer Displays

With the advent of CD-ROM memory, a world of information is now available to children concerning any topic that they might choose, including deafness. Information available from these sources should be integrated with similar information available through the print, film, and TV. Interested sponsors might contact Roger Wagner Publishing, Inc., 1050 Pioneer Way, El Cajon, CA 92020 for innovative ways to accomplish this.

OUTSIDE THE COMPUTER ROOM

The easiest way to teach hearing children to have fun with hearing impaired children is to invite them to join at play. Begin with games that do not involve hearing, and progress to those in which hearing is common, but something else is substituted. For example, play Musical Chairs in the usual way, but accompany the music with a strobe light that ends when the music does. Then try the game with the strobe light alone. The educational programs of children with disabilities

is reviewed frequently, and the child's committee needs to be informed fully about the advantages and possible side effects of camp participation. My own experience with computer campers from outside the mainstream is that they enjoy the camp, are accepted and helped by their peers, and want to come again.

He was seven, ungainly, coarse-featured, dusty from play, and almost blind. He was scheduled to see the eye doctor the next day.

"Glasses won't do any good," he said in a matter of fact tone, "I'll be blind in six weeks."

"I don't think so," I said, lightly, not feeling light.

"It doesn't matter," he said. He likes me, and he didn't want to distress me.

WHAT SHOULD KIDS DO IN THE COMPUTER ROOM?

"Computer Literacy"

It seems self-evident. Children entering the twenty-first century should know how to use a computer. The parents I visit tell me that children who cannot use a computer will be handicapped as adults. I don't disagree, but I have reservations. As computers become more integrated into the fabric of our society, and as computer software becomes more "user friendly," tomorrow's children will be less aware than today's that they are "using a computer," and few of today's computer skills will be useful. For this reason my computer camps emphasize instruction by computers rather than instruction about computers. Nevertheless, some instruction about computers remains helpful.

FLOPPY DISK MAINTENANCE

Disk Handling

A child will damage a floppy disk much more often than he or she will damage a computer. Although a camp blessed with modern equipment may use 3.5-inch disks, hard drives, or a central server, camps operating with older equipment will still use 5.25-inch "floppies." In any case, children should be instructed in their care.

I introduce the children to disks by holding one up, in its envelope, and telling them it is called a "floppy disk." After mentioning that this disk is a damaged one, I use scissors to remove one edge of its case and slide out the disk itself, letting them see that the disk is both circular and "floppy." Next, I show them that a 3.5" case contains a similar smaller disk. Finally, I pass the disks and their cases around the room.

5.25" Disks

My first emphasis is upon keeping disks in envelopes. When I used 5.25" drives for most applications, each child received a personal disk with some games

and tutorial programs. I hand out these disks, telling the children to keep them in their envelopes to avoid touching the exposed portion of the disk with their fingers. There is a marker at each computer, and the children are asked to write their first name on the disk's label without removing the disk. Next, I tell them that the disk should always be in one of two places: the envelope or a disk drive. Finally, I show them that if they grasp the disk with their thumb in the middle of the label and don't change hands, the disk will go into the drive in the correct position naturally.

Once they know how to hold a disk, the children are asked to remove it from the envelope, slide it into the disk drive, and close the drive door. "Like a dresser drawer," they are told, "if the disk doesn't slide easily, straighten it instead of pushing harder." Some computers have more than one drive, so I have to tell the children which drive to use. Each child moves the disk from the drive to the envelope and back again a couple times.

Many years ago it was risky to a disk to have it in the disk drive when the computer was turned on; however, beginning with the Apple II series, a generation of school children were taught that the way to begin is to put a disk in the drive and turn the computer on. It is unlikely that any modern computer will damage a disk that is in the disk drive at onset.

I check that each computer has a disk in the drive, and instruct the children to turn on their computers. They are to note that there is a light on the disk drive or keyboard to tell them when the disk drive is in use. I tell them to wait until the light goes out and to turn the computer off. This prevents distraction.

3.5" Disks

When instructing children in the use of 3.5" disks, there is no longer a necessity to keep the disk in its envelope, but children should be cautioned not to play with the metal slide that covers and protects the floppy. In addition, point out that ejecting a disk from a 3.5" drive requires an electric motor, and this motor does not work if the computer is off; therefore, the disk must be removed before the computer is turned off.

Program Interrupts

Many computers have one or more keys on the keyboard to interrupt computer operation. Damage to disks is possible if this is done while the disk

drive is in operation, especially if the computer is writing to the disk at the time of interrupt. Using the following table as a guide, tell the children where to locate the interrupt key on their computers.

INTERRUPT KEYS

System	Key(s)
Apple Macintosh & Apple IIGS	Option-Q (or use mouse to choose "FILE"; then "QUIT")
Apple II series	"Control-Reset"
Laser series	"Ctrl-Reset"
IBM /compatibles	PF-

Explain to the children that there are four things they ought not to do when the disk-drive light is on: (1) Put a disk in the drive; (2) remove a disk from the drive; (3) turn the computer off; or (4) "reset" the computer. If a drive with a disk in it runs on and on without stopping, as sometimes happens when there is a computer or software problem, children should summon the instructor for assistance. Don't tell the campers, but when the light won't go off, removing the disk after an appropriate waiting period is less apt to damage the disk than turning off the computer or resetting. NOTE: the word "reset" is appropriate for an Apple II or Laser computer. Use the word on the interrupt key for other computers. It is not helpful to use the word "interrupt" with young children unless the key is labelled with that word.

Demonstrate to the children what they need to know for their first lesson (see below). Have them count to 15 and then turn on their computers again. Tell them they must always count to 15 after they turn off the computer before they turn it on again. If you use the 5.25" **Camp Master** disk, the computer will give them a menu of simple games and lessons, and I recommend the children choose MONIKERS to begin. If you use other software, choose programs that load quickly and are self-instructing.

Testing the Log On/Boot Process

Test the children one by one, using this sequence. Any time the child omits an answer or is wrong, give the right answer and have it repeated.

• Without interrupting the program in progress, ask the child to point out the "red light" (or "disk drive light").

• Using the name appropriate for the child's computer, ask the child to show you the interrupt key.

• Ask the child what four things cannot be done with the light on (disk in; disk out; turn off; interrupt). With the younger children I accept three right answers out of four, or I test the children in pairs allowing either child to answer.

• Using a disk other than the one in the drive, have the child boot the newer disk. When using a 5.25" floppy, the first two steps may be reversed.

- Remove the first disk and replace it in its envelope.
- Turn off the computer.
- Place the new disk in the disk drive.
- Count to fifteen
- Turn on the computer

The usual errors are not turning off the computer or forgetting to replace the disk in its envelope. I stop a child from laying a disk on the table-top ("What are you doing?"), but I do nothing immediately if they forget to turn off the computer. They are usually puzzled about how to proceed after they have placed the new disk in the drive, and the older program is still on the screen. Let them experiment a little. Often they will use the interrupt key, which does not reboot the disk with many programs, including mine. Give them whatever hints are necessary to get them to turn off the computer. For example: "How do you start a car?" ... "Good. How do you start a computer?" ... "What do you need to do before you turn it on?" Make sure there is a 10-second interval ("Count to 15") between when the computer is turned off and when it is turned on again.

If a child misses something significant, have him or her watch while you test another child, and then ask the question that was missed.

Continue until every child has heard your questions. This concludes the first lesson.

On the following day, ask the whole class something they should not do when the disk drive light is on. Continue until you have elicited all four, repeating each as it is mentioned. Children may try "turn the computer on" as an answer. Tell them gently that the light won't be on if the computer is off, but don't use ridicule. (Don't ever use ridicule.)

Environmental Factors

Tell the students that there are other things besides the "red light" or "drive light" that cause trouble for disks. Mention the following:

Dust. "Laying a disk on the table without its envelope is like laying your Sunday clothes in the mud."

Smoke. "Smoke is dust. Smoking isn't allowed in computer rooms."

Food or Drink. "Greasy fingers tear up disks." Don't suggest that a child has "sticky fingers..." A child with sticky fingers is a thief.

Heat. "A disk left on a car seat in the summer will warp like corrugated cardboard." Try this on a discarded disk for demonstration purposes. Make sure that children know it is heat, not light, which causes the problem. Computer disks, unlike photographic film, can be exposed to light. Cold can be a problem, but computer campers don't have occasion to use frozen disks.

Magnets. Ask the children where they are apt to encounter a magnet. They will chorus: "Refrigerators!" Agree, but add that some telephones use magnets to ring, and every audio speaker is a magnet, so they need to keep disks away from tape players and TV sets. Having mentioned TV, tell them it is also a bad idea to lay a disk on the computer monitor, but don't confuse them with why.

Bending. In my experience, more disks are damaged by bending than by any other reason. The damage occurs when disks are bent to get them by something in front of the disk drive (usually a joystick), pushing too hard when a disk won't slide easily into a drive, or simply being in too much of a hurry to insert or remove a disk. Camp organizers, incidentally, damage disks by putting too many in a storage box.

Pencils and Ball-Point Pens. Remind the children that they wrote their name on their disks with a marker. Pens and pencils put pressure on the disk and can leave a groove.

Test the children using my software or a method of your own choosing. With the 5.25" **Camp Master** disk, the program is `FLOPPY QUIZ`. With the 3.5" **CampMaster**, the program is **Please Don't**.

NOMENCLATURE

Campers need to know the parts of the computer. On either disk, the program JARGON shows a picture of a computer and identifies the following: printer, fan (with power switch and interrupt), keyboard, monitor or CRT, computer, disk drive, floppy disk, joystick, and (3.5" disk only) mouse. Users of IBM-style keyboards need to identify the "function keys."

When a child has demonstrated proficiency by answering the computer's questions, have him or her name the parts of the computer to you, pointing to each in turn. Make the child do it the hard way. Point and ask "What is this?" rather than asking the easier: "Show me the joystick." If a child misses a component, have him or her watch while you test someone else, and then return for a retest of the item(s) missed. Only two children out of 150 could not complete this lesson for me.

BOOTING AND RUNNING

Early Apple II users were spoiled, since they could boot a program simply by placing the disk in the drive and turning on the computer. Macintosh users must work harder, as must anyone using computer icons and windows. The process of getting past a succession of passwords on a network system can frustrate an adult, let alone a child, and it may be necessary to attach "Log on instructions" to each computer.

Apple Macintosh; Other Icon-Based Systems

Use of the mouse is a priority if the camp is equipped with Macintosh or Apple IIGS computers or uses MicroSoft **Windows** on an IBM/compatible.

- Begin the lesson with the mouse itself: They should not touch the bottom side of the mouse, fight over it, or try to take it apart. Don't allow them to pull on the mouse (or any other) cable. Should the cable be pulled out of the computer, children should not replace it. Try to provide a mouse pad and have them keep the mouse on it. Show children how to get the cursor to the edge of the screen by picking the mouse up and moving it back to the center of the pad.

- Use a tutorial program to show children how to choose, move, and start programs using icons. Have them practice using the finder and pull-down menus. Show them how to distinguish a start-up icon from a file folder.

Apple II Series; Laser 128 Computers

A child can start up an older Apple II computer that has a 5.25-inch drive by simply turning the computer on; however, running the program frequently involves reading and responding to screen instructions. Among the common options, children may be asked to type their names, hit <Return>, hit the space bar, choose from a menu, turn the disk over, or locate and insert a disk other than the one with which they started. When several children ask for assistance with startup screens simultaneously, especially if the response is as simple as hitting the <Return> key, there is a temptation to reach over a child's shoulder, tap the key, and go on to the next child. Don't do it! Show the child the line on the screen that asks for a response and point to the key on the keyboard, but let the child do the work; otherwise, you will be asked the next time.

If a program begins without questions, the child may be frustrated to find that, for example, the computer will not respond to the joystick. At a computer camp with dozens of programs, the disks are frequently separated from their documentation. Only after the documentation is located can it found that the "default" input device is a mouse, and that the joystick is activitated by something such as (1) pushing a joy-stick button; (2) holding down the `Control` key and pushing `J`; (3) holding down an `open-Apple` or `Option` key and pushing `J`; or (4) pushing a certain key (usually `Escape`) when the disk is booting to enter a default menu. Activating the joystick may aggravate the problem. There is a series of very popular and otherwise well-written programs in which the cursor moves continuously and rapidly from one option on the menu to the next if the joystick is not perfectly centered. The practical result is that the game cannot be played using the joystick for input.

Icon-based systems for the Apple II series may accept the keyboard or joystick as well as a mouse, so some practice with these is suggested.

IBM Computers or Clones Using MS-DOS

A camp using many individual computer disks on older IBM computers or clones does not differ much in operation from camps running on Apple computers, although the IBM keyboard can be intimidating to young children. On the other hand, once the log-on procedure has been mastered, an IBM system with a central server and site licenses for software offers great convenience over camps with boxes of individual disks. Whichever computer is in place, there should be a simple, self-explanatory program for children to access and use to become comfortable with the system.

INTERRUPTING, STOPPING, AND QUITTING

One can always terminate a program by turning off the computer; however, damage to disks or files may occur if this is done at the improper time. Fortunately, most newer programs have interrupt instructions, and some degree of consistency is emerging for different computer systems. Interrupt keys have been mentioned above.

Apple Macintosh; Icon-Based Systems

Children, especially if they have had previous experience with Apple II computers, will terminate a session by simply turning off the computer. Sometimes this is appropriate, but children should be taught how to interrupt the program, close files, and then use a "Quit" command so that the operating system remains in place. Provide a short program that loads quickly to allow children practice in loading and quitting without leaving the operating system.

Apple II Series; Laser 128 Computers

I teach children that there are five ways to interrupt an Apple II program, although only one of these is assured. In order of increasing finality, these are `Control-S`, `Escape`, `Control-C`, `Control-Reset`, and turning the computer off.

`Control-S` (Pausing). When DOS 3.3 was the standard Apple II operating system, and to a lesser extent after the introduction of ProDOS, many programs on the Apple II could be suspended temporarily by holding down the `Control` key and pressing `S`. The program would freeze, and resume at the same place when another key was struck. This *ipso facto* standard is much less common now, and `Control-S`, if it has any effect, is more likely to toggle the sound off and on.

`Escape` (Backing Up). After the introduction of DOS 3.3, but before the ProDOS era, Apple used a modification of the UCSD PASCAL system not only for PASCAL, but for FORTRAN, PILOT, and other languages. A feature of this system was the use of the `Escape` key to "back out of" a particular screen or editor. These interrupt functions were adopted and extended in other programs, so that the `Escape` key has become the new *ipso facto* standard for interrupting a program without terminating it. If the interrupt does not back up to a previous menu, there will usually be screen instructions to tell the user what to do next.

Control-C (Breaking). DOS 3.3 introduced the combination Control-C, which caused a program to stop with an on-screen notice such as

```
BREAK IN LINE 455 .
```

Some, but not all, programs could be resumed following a Control-C break by noting the break line and typing, say,

```
GO TO 455 .
```

Other programs disable this interrupt, and I no longer teach it to computer campers, even if they are using DOS 3.3 disks. I do use it myself on occasion.

Control-Reset (Resetting). Original Apple computers were interrupted and reset whenever the **Reset** key was struck, and <Reset> was located just above <Return>. More than a few users swore at their keyboards before Apple modified the design to move the key and to require that <Control> and <Reset> be pressed simultaneously.

Although a few programs disable the **Reset** key, this keypress will usually terminate operation when the program itself does not provide an intercept. Campers should be advised to try the **Escape** key first. Remind them that interrupts should not be tried at all while the disk drive light is on.

Turning Off the Computer (Ending). Children can be sure of getting the computer's attention if they turn off the power. If other interrupts do not work, and the disk drive light is not on, children can end a session by turning off the computer. Removing the power may make it impossible to eject a 3.5-inch disk from the drive, so 3.5-inch disks should be removed before the power is turned off.

OTHER SYSTEM COMMANDS

It is imperative that campers learn enough about the system they will be using to find their way around it and run programs. It is less clear that they will find details of the operating system useful, and they are better off without some knowledge. Ten-year-olds do not need to initialize hard disks, and by the time they enter college (or the work force) their computer-camp operating systems will be obsolescent, so why harass them with arcane instructions? The commands that follow are those I consider worth teaching.

Changing Disk Drives

At startup, the computer will read from a particular disk drive, the "boot drive." It is not usually appropriate to teach campers how to change the drive used to boot, but campers do need to know how to read or write to a disk in some other drive. The method varies from system to system.

Apple Macintosh and Other Icon-Driven Systems. In most cases the drive accessed by an icon-driven system is identified by the name of the disk in the drive, and the computer will find that name automatically; however, older drives or empty drives may be identified with a "drive icon," and reached by clicking the mouse on that icon.

Apple II Series, Old Disks (DOS 3.3). Older disks, as well as some newer ones obtained through distributers of programs in the public domain, may use Apple DOS 3.3. A new drive is accessed by appending a new "drive number" to a valid DOS 3.3 command. Usually the computer is booted using Drive 1, Slot 6. To run the program CIVIL from Drive 2, Slot 6, one would type

```
RUN CIVIL,D2  <Return> .
```

There is also a slot-command. If the program CIVIL were in Drive 1 of Slot 7, one would use

```
RUN CIVIL,S7,D1  <Return> .
```

Neither the slot command nor the drive command is required. If unchanged, either or both may be omitted.

Apple II Series, Newer Disks (ProDOS). Newer Apple computers use ProDOS, which searches each disk drive in turn to find the program of interest. A hyphen may be substituted for the word RUN. To run the program CIVIL, type

```
- CIVIL
```

Slot and drive designations are still available under ProDOS, but are not as useful.

Sometimes programs are stored in the computer's memory using a format similar to that used to store the same program on disks. Although the program

cannot be run directly, it is said to be "on a RAM disk" (for Random Access Memory), and can be accessed much more quickly than from a disk. The command

```
PREFIX  /RAM5
```

would tell the computer that it should look to the RAM-disk RAM5 for programs until told to look elsewhere. With icon-based systems, RAM has its own icon, and clicking on this icon will tell what files are stored there.

NOTE: Apple IIGS users should be aware that when 3.5-inch and 5.25-inch drives are "daisy-chained," the 3.5-inch drive will appear to be Slot 5, Drive 1, the RAM-disk will appear to be in Slot 5, Drive 2, a second 3.5-inch drive will appear to be in Slot 2, Drive 1, and 5.25-inch drives will appear to be in Drives 1 and 2 of Slot 6. Happily, computer campers can be spared this information, as can users of System 6.0.1, the icon-based system for the Apple IIGS, and its successor systems.

IBM Systems (MS-DOS). Each drive controlled by MS-DOS has a "volume designation," usually A:, B:, C:, and so on. To change from volume C:, say, to volume A:, simply respond to a prompt such as

```
/C:
```

by adding A:

```
/C:A:
```

and the prompt will change to

```
/A:
```

There is no difference between upper and lower case letters when designating MS-DOS volumes.

Directories

To run a program, the camper must first find it. Table III lists the commands used by different computer systems for this purpose. Provide each camper with a disk containing several programs. Have them use the appropriate directory command to find and run a program.

DIRECTORY COMMANDS

System	Key(s)
Apple Mac or IIGS, Windows	Use mouse to choose icon
Apple II (old)	CATALOG
Apple II (newer)	CATALOG (full) or CAT (abbreviated)
IBM (MS-DOS)	DIR

Entering and Saving Programs

Since young children are computer users rather than computer programmers, I do not emphasize programming skills; however, it does no harm to write a very short BASIC or LOGO program for the children to type in and save. Applesoft and LOGO programs that I sometimes use follow.

Applesoft

```
11   GET A$
12   GET B$
13   GET C$
14   WRITE A$;B$;C$;
15   GO TO 14

SAVE GEORGE
```

LOGO

```
TO GEORGE :L

HOME CS
HT
REPEAT 41 [ FD :L RT 163 ]
ST
END
```

In writing your own program, you may agree that the following are helpful:

• The program lines do not contain any zeroes to become confused with the letter "O".

• The child must find a symbol on the keyboard such as "[" that is neither a letter nor a number and at least one like "$" that requires the "Shift" key.

• The program is very short. Even so, beginning typists will need assistance.

The Applesoft program runs until it is interrupted, providing practice with interrupt keys. My opinion that this is an advantage is open to question.

To provide a sense of ownership, I have children save the program with their own first name as the program name. Consult the manual for your computer system to find out how to install BASIC (or LOGO) on your computer and how to save a program in that languages.

Computer Languages

There is questionable benefit in teaching computer languages to children less than twelve. As indicated in the previous section, I do provide some experience with Logo, but my intention is to teach what a program is and how it can be saved rather than making my campers into embryo programmers.

I have not always used Logo. Before I bit the bullet and bought a Logo PLUS 10-PAK, I used short programs in Applesoft Basic instead. There is a simple advantage to Applesoft: it comes with every Apple II computer.

There is no inherent reason why young children cannot learn Logo, Basic, or other languages such as Pascal or HyperTalk; however, teaching a language takes more concentration and more time than I have available. In addition, there are a subset of children who will find learning even a cursory knowledge of Logo difficult or impossible. As any teacher does, I prefer that almost all my children learn almost all I try to teach them.

I was impressed recently by "Teaching Programming with Music," a report by Mark Guzdial for the Logo Foundation at 250 West 57th Street, Suite 2603, New York, NY 10107-2603. Guzdial's success teaching Logo to 6th graders was due to the children's perception that they were learning music. As he put it: "The process of learning Logo in this class was shaped by student problems in their music procedures and requests for new tools to use in their music. Music was the driving force in their learning of Logo." No, the children were not musicians, either, except as all children are musicians, given some opportunity.

Consider HyperTalk. Both HyperCard and HyperStudio offer attractive advantages as computer languages for older children. It is possible to obtain significant results without a great deal of experience, and children enjoy the direct use of graphics and sounds. I find HyperCard on the Apple IIGS significantly more satisfactory (and far cheaper) than HyperCard on the Macintosh. HyperStudio has the advantage of being supported on most computer platforms, and it is often available in schools. Students creating pages for the World Wide Web will note similarities between the use of HyperCard or HyperStudio and the organization of a Web Page.

I have used Logo for many years. If you can use techniques such as Guzdial's, cited above, by all means try Logo; otherwise, your computer's simplest programming language, usually BASIC, is the language of choice.

It was the first day of computer camp. She wasn't a favorite of mine, opinionated and quarrelsome, as apt as any boy to argue with her fists, and apter to win. Right now, she was in the middle of my van, noisy and assertive as always.

They were standing at the bottom of their driveway as the van came up, an older girl and a little brother. Their home had nothing to offer but children, and the children were slow and far behind at school.

"Oh, no!" exclaimed a boy. "Look who's coming!"

"Shut up," she said. "They're just as good as you are!"

As I started to say, she was a favorite of mine.

Sources for Computer Programs

If you are conducting your computer camp with new computers, you will have many sources for software; however, if you are operating on a shoestring and using older computers, you will have more difficulty finding the programs you need. In the pages that follow you will first find sources of software, next a discussion of shareware and public domain software, and, finally, my opinions about software I have used and places to find reviews by others.

I will discuss eleven sources for software: hardware dealers; software dealers; bookstores and mass merchandizers; educational supply houses; mail order dealers; magazines (including those on disk); shareware, freeware, and public domain software; electronic bulletin boards; clubs and user groups; CD-ROM collections; original programs.

HARDWARE DEALERS

For the purpose of discussion, a hardware dealer is someone who sells computers, disk drives, printers, and other computer peripherals over the counter, but won't sell you, say, a stereo receiver. If the dealer wants to sell software, it will be displayed prominently on the walls of the store. If there isn't a big software display, expect poor selection, heavy emphasis upon expensive packages, and not much interest in you as a software customer.

Having implied that hardware dealers are a poor source for software, let me add that the hardware shop in your own community may be the exception. You should always receive cooperation, and perhaps some software discounts, if you are negotiating a hardware purchase. Some dealers have a cellar or back room where they stack old software received in trade or a lot sale. It doesn't hurt to ask, and you may find some real bargains.

Somewhere in the back of the shop is the service department. The service person knows twice what the sale people know about new computers and six times as much about older models. He or she also has a boxful of old disks that are used to test computers brought in for repairs. If you pick a quiet time, bring blank formatted disks with you, and don't make a nuisance of yourself, you may get copies of system patches or other software updates.

SOFTWARE DEALERS

For my purposes, a software dealer is someone whose principal business is selling boxed software over the counter. They also carry computer paper, joy-sticks, a mouse or two, books, magazines, and video games. They usually stock many MS-DOS and CD-ROM titles, a few popular Macintosh disks, and odds and ends of other titles. Expect only a modest discount over list prices. Look for shelves or sections with budget software and a bargain bin containing out-of-print software. The shop will order titles that they do not have in stock, but you'll get a better price and save sales tax by ordering yourself.

You should consult the local Yellow Pages for the software dealer nearest you. Those willing to buy used software might consider the Used Computer Store, below, which also sells through the mail, as is. The one disk I bought from them wasn't particularly cheap, but it works and wasn't available elsewhere.

Used Computer Store, 2440 Shattuck Avenue, Berkeley, CA 94704; 1-510-548-8686. They sell used equipment as well as software.

MASS MERCHANDIZERS

Bookstores have rapidly changing inventories. Several years ago they carried a good selection of bargain-priced software, but they sell less now. Some, like WaldenBooks, have independent software outlets. Although you can't look to bookstores at the moment, don't be surprised by a change in policy later. Mass merchandizers, such as Sears and Wal-Mart, carry a modest inventory of the best-selling computer disks, and more specialized stores like Radio Shack and Office Depot maintain a reasonable choice of MS-DOS/Windows software. Good toy stores have children's software, and even grocery chains may carry the cheapest IBM/compatible titles. Watch for sales!

EDUCATIONAL SUPPLY HOUSES

Schools, especially, should contact educational supply houses for their lists. The addresses of a number of these follow. Some publish the software they sell, while others sell software from many sources. All of their catalogs are written with schools in mind and emphasize quantity discounts and site licenses. School editions of software, which provide teaching materials, lesson plans, and suggestions at a moderate additional cost, are also available. Many catalogs include best seller lists or charts for each type of software (math, reading, ...), pairing software titles with children's ages or grade levels. There is usually a descriptive paragraph for each title.

The bad news is that software descriptions are never critical, bargain priced software is rare, and even the discounted software is expensive, since those ordering from these catalogs typically pay with purchase orders, not by reaching into their own pockets. The good news is that education outlets are aware of the installed base of older computers in the public schools and continue to produce software for them. They also answer their mail, even when you don't send money.

I have divided the list into publishers and distributors. Publishers are those who produce their own software, although they sell selected titles by others. To retain their distributors, they often charge more for the titles they publish. Distributors may have a limited number of proprietary titles, but their principal business is to sell you software published by others. It is not always easy to distinguish between publishers and distributors, and you should peruse both lists.

Publishers

AV Systems, Inc., Adrian Vance, P.O. Box 60533, Santa Barbara, CA 93160; 1-805-569-1618. Vance was once the system operator for the A2 (Genie) education category and publishes very low-cost, text-based school software with a lifetime guarantee. An order I placed in 1993 was received in ten days. The cover of the catalog I received is titled: "Save — Apple II Forever Sale — Save — More for '94." I have received updates since, but not recently.

Bruce Jones Design, Inc., 31 St. James Avenue, Suite 1060B, Boston, MA 02116; 1-800-843-3873. Bruce Jones provides disks loaded with maps compatible with popular graphics programs for IBM, Macintosh, and Apple II systems. I made an inquiry in 1993 promptly received both their current listing and a donated set of maps for the Apple IIGS. I confirmed that these maps could be read and utilized within graphics programs I own: **AppleWorks GS**, **BeagleDraw**, **Platinum Paint**, and Softdisk's **MiniPaint**. In addition to their educational value, the maps may be used as electronic coloring books by younger children.

Critical Thinking Press & Software, P.O. Box 448, Pacific Grove, CA 93950; 1-800-458-4849; 1-408-372-3230 (FAX). These folks publish educational workbooks and software, mostly for the middle school and up. Their products have an emphasis on induction and logic and are described in an untitled catalog that was mailed recently to me and other persons on their mailing list. There is software for the Apple II, IBM/compatibles, and Macintosh.

Edmark, 6727 185 Avenue N. E., P.O. Box 3218, Redmond, WA 98073-3218; 1-800-362-2890 (customer service); 1-800-528-7158 (technical support);

1-206-556-8430 (FAX). I wrote to them in 1993 and received their "Educational Print and Software Catalog" (1993). The 1994 catalog followed promptly without an additional request. Their resources appear expensive, but valuable. Among other early learning products, they publish a comprehensive reading system and manufacture a touch screen for the Amiga, Apple II, IBM/compatible, and Macintosh.

Kingwood Micro Software, 2018 Oak Dew, San Antonio, TX 78232; 1-210-490-6373. Kingwood Micro provides disks with assistance, especially, to those using UltraMacros with **AppleWorks** on the Apple II computer. See *TEXAS II* under **Magazines**.

Laureate Learning Systems, 110 East Spring Street, Winooski, VT 05404-1837; 1-800-562-6801. My inquiry in November of 1993 led to immediate receipt of "Sequential Software for Language Intervention" by M. S. Wilson (1991) and "Talking Software for Special Needs" (Fall 1993). They also furnished a free video to explain their material for developmental learning. The 1994 edition of "Talking Software" featuring bilingual software arrived early that year without an additional inquiry, and I have received their catalogs since. Besides an emphasis on early childhood development, Laureate demonstrates a particular concern for brain-damaged or traumatized adults. There customer service is excellent.

The Learning Company, 6493 Kaiser Drive, Fremont, CA 94555; 1-800-852-2255. I have their "Parents Guide to Selecting Educational Software" (1992-1993) and "School Software Catalog -- for Grades K-12" (Fall/Winter 1993). In my prejudiced view, the Learning Company's educational software stands in a class by itself for quality at reasonable cost. Having moved away from the Apple II market that established them as a leader, the Learning Company produces its new titles for the Macintosh and IBM/compatible; however, established Apple II favorites such as **Reader Rabbit** and **The Children's Writing and Publishing Center** live on.

Lexia Learning Systems, 11a Lewis Street, P.O. Box 466, Lincoln, MA 01773; 1-800-435-3942; 1-617-259-8752; 1-617-259-1349 (FAX). Lexia responded to my 1993 request with a catalog, "Software for Reading by Educators for Educators" (1993), a news report about their material, and a personal note indicating that although their assessment program was available for the Apple II, the Lexia Reading Series was developed with an IBM format using multisensual inputs to teach language skills to dyslexic children, especially. The charge for a typical unit is $50, but most are intended for use in a five-unit sequence. The material appears attractive and professionally done.

MECC, 6160 Summit Drive North, Minneapolis, MN 55430-4003; 1-800-685-MECC. MECC replied immediately to my inquiry in October, 1993 with "Apple II Catalog" (undated), "Education Catalog" (Fall 1993), and "Multimedia Catalog" (undated). A number of MECC titles, **Oregon Trail**, especially, have already become software classics, while the **Storybook Weaver** series looks like a new best seller. Purchased separately, MECC disks are not cheap ($70, typically), but MECC is serious about offering substantial discounts to licensees and MECC club members. There are MECC titles for the Apple II, but new programs are only being developed for the IBM/compatibles and Macintoshes.

Mindscape (see SVE, below)

Sunburst Communications, 101 Castleton Street, P. O. Box 100, Pleasantville, NY 10570-3498; 1-800-321-7511 (customer service); 1-800-338-3457 ext. 2179 (technical support); 1-800-628-8897 (billing); 1-914-747-4109 (FAX). Sunburst publishes early childhood education software, including the delightful **Muppet Learning Key** boards. Immediately after an 1993 inquiry, I received "Sunburst: Wings for Learning" (1993-94), their listing for language arts, science, and math. They also returned the stamps I sent them! They have some Macintosh programs, but the emphasis is on the IBM/compatible and Apple II computer lines.

SVE (Society for Visual Education, Inc.), 1345 Diversey Parkway, Chicago, IL 60614-1299; 1-800-829-1900 (phone order); 1-800-624-1678 (FAX order); 1-312-525-1500; 1-312-525-9474 (FAX). Previously listed at this address under Mindscape Educational Software, SVE offers laser discs, videocassettes, filmstrips, and CD-ROMs as well as traditional software in nearly 200 pages of well described audiovisual items. The catalog I received after a four-week wait was titled simply "1993 Instructional Materials -- PreK - 12." The price range is typical for educational materials, and a 30-day trial is standard.

Terrapin Software, Inc., 400 Riverside Drive, Portland, ME 04103-1068; 1-800-972-8200; 1-207-797-9235 (FAX). Terrapin publishes well documented Logo curriculum materials for the Apple II, Commodore 64/128, IBM/compatible, and Macintosh computers. I have used their Logo PLUS 10-Pak in my camps for several years. Their untitled 1993 catalog was sent to me as soon as I requested it, and the Spring '94 edition arrived later.

Tom Snyder Productions, 80 Coolidge Hill Road, Watertown MA 02172-2817; 1-800-342-0236. Immediately after my letter in 1993, I received their "Educational Technology Catalog" (Fall '93 / Spring '94), and the Spring/Summer '94 version arrived in January. Thereafter, I received their

newsletter. I was also notified when they sponsored a seminar at a teachers' conference nearby and the most recent catalog carried information specific to my state. Many items are integrated packages, with $150 price tags, intended for use by groups, rather than individuals. They are the only educational publisher I know with an explicit group emphasis. Snyder offers "The One Computer Classroom Video" for 30-day loan. They claim, with reason, that teachers will read their catalog from cover to cover after they receive it. There is support for Apple II, IBM/compatible, and Macintosh computers.

William K. Bradford Publishing Co., 310 School Street, Acton, MA 01720; 1-800-421-2009; 1-508-263-9375 (FAX). I wrote to this publisher and distributor of educational software in 1993 and received an immediate reply with a copy of "K-12 Software" (1994), which describes over workaday 200 programs in the areas of math, science, and language for Apple II, IBM/compatible, and Macintosh computers. A typical program costs $75 for the school edition.

Distributors

Educational Resources, 1550 Executive Drive, Elgin, IL 60123; 1-800-624-2926; 1-708-888-8300; 1-708-888-8499 or -8689 (FAX). My inquiry in 1993 resulted in immediate receipt of their Full-Line Catalog, Fall 1993. After that their catalog became my primary reference for current, standard educational packages and their cost. In addition to an excellent alphabetized summary of their offerings, they list their best selling software in seventeen different educational catagories. They carry home editions, school editions, and site licenses for programs running on Apple II, Macintosh, and IBM/compatible computers.

Gamco Industries, Inc., P.O. Box 1911, Big Spring, TX 79721-1911; 1-800-351-1404; 1-915-267-6327; 1-915-267-7480 (FAX). Gamco provides school materials, workbooks, and software as publisher and distributor. They support the Apple II, IBM/compatible, and Macintosh. When I wrote for information in 1993, I received a reply a week later that included "Gamco Education Materials" (1994), "Math-Master Teaching Materials for Mathematics, 1993, Grades 1-12," and "Teaching Materials for Special Needs, Grades K-12" (1994). Much of the software, which costs $60, typically, has been favorably reviewed or won awards from educators.

Learning Lab Software, 20301 Ventura Blvd., Suite 214, Woodland Hills, CA 91364; 1-800-889-3475; 1-818-887-5091; 1-818-887-5936 (FAX). I have "The World of Software" (1992). Following a request for a new catalog in November of 1993, I received a second copy of the catalog, with the "1992" covered by a

gummed label, together with more than ten pages, printed on both sides, of addenda and changes. I have no complaint with this cost-saving maneuver. There is a general emphasis on students with special needs. For example, the special education section of the catalog contains mechanical switches for students with limited mobility, products I have seen advertised only here and by Edmark. Software is offered for Apple II, Macintosh, and IBM/compatible systems. The long list of titles described in the catalog is supplemented by an even longer list of titles that are available, but not described.

Learning Services (LS), P.O. Box 10636, Eugene, OR 97440-2636; 1-503-683-3827 (inquiries); 1-800-877-WEST(orders); 1-503-484-7499 (FAX). Not only does LS distribute educational software for the Apple II, IBM, and Macintosh computers, they are one of the few suppliers carrying Commodore titles. I had their 230-page "Computing Showcase 1990-91," which has more than forty double-column pages of educational program titles, and they replied to my 1993 inquiry with three additional descriptive catalogs: "Tools for Active Teaching and Active Learning" (undated), "Back to School" (1993), and "Catalog Supplement" (1993-1994). Included in the latter are lists of the ten most requested titles in each of several categories, such as Foreign Language, General Learning, Language Arts, Recreation, and so forth.

Nasco, 901 Janesville Avenue, P.O. Box 901, Fort Atkinson, WI 53538-0901; 1-800-558-9595 (orders); 1-414-563-2446 (support); 1-414-563-8296 (FAX). When my letter in November of 1993 wasn't answered immediately, I sent a second inquiry to the Modesto address, below, in December and received four thick catalogs within two weeks: "Nasco Science '94," "Nasco Learning Fun '93," "Nasco Math" (1993), and "Nasco Arts and Crafts" (1994). I do not know which outlet responded. There is very little software in these catalogs, and most of it can be found elsewhere, but there are pages and pages of colorful educational toys to be used outside the computer room, and the crafts book is full and comprehensive.

Nasco, 1524 Princeton Avenue, Modesto, CA 95352-3837; 1-800-558-9595 (orders); 1-209-529-6957 (support); 1-209-529-2239 (FAX). See previous listing.

National School Products, 101 East Broadway, Maryville, TN 37801-2498; 1-800-627-9393; 1-615-984-3960; 1-800-289-3960 (FAX); 1-615-983-9355 (FAX). I wrote to National School Products in 1994 after reading a complimentary review in *Shareware Solutions II* (vol. 1, no. 4), which cited a 220-page catalog of educational programs at retail prices followed by 20 pages of discounted entertainment software published for the Apple][+ and other older computers. The catalog, "1993-1994 Educational Software for your apple II+, IIe, IIc, IIGS, and

Macintosh," arrived immediately. Among the titles of discounted software, I was pleased to find camp standards such as GATO, **Wheel of Fortune**, and the original **Print Shop**. Also listed, but at full retail price, **Think Quick** ($49.95). Try to find that somewhere else! They offered, but I did not send for, specialty catalogs for Macintosh or IBM/Compatible systems. Included with the Apple listings was an untitled catalog having the company name on the cover and 280 pages of general school supplies inside. There were only two pages of software titles in a third, undated catalog, "Drug and Health Education Awareness," but there was plenty of material there for a sponsor wanting sessions dealing with drugs, sexuality, or physical handicaps. I read subsequently that they did not reissue their Apple II listing, but even more recently I read they were still selling Apple II titles.

Opportunities for Learning, Inc., 941 Hickory Lane, P.O. Box 8103, Mansfield, OH 44901-8103; 1-800-243-7116; 1-419-589-1700; FAX 1-419-589-1522. As a result of a 1993 letter, I received "Educational Software" (1993 Catalog) immediately. Most offerings are at publishers' prices, but there is a discount page with a couple hundred (discontinued?) titles. The company has other catalogs in more specialized areas of interest. They support the Apple II and IBM/compatible computers and have a few Macintosh programs.

Queue, Inc., 338 Commerce Drive, Fairfield, CT 06430; 1-800-232-2224; 1-203-336-2482; 1-203-335-0906 (FAX). Queue replied by return mail to my inquiry in September of 1994 with "The Best in Educational Software and CD-ROM," Vol. 57. Beginning with an impressive list of CD-ROM's, Queue provides more than 1200 titles ranging from **Grandma's House** on 5.25-inch floppies for the Apple][to freshly published CD-ROM software utilizing the best available graphics and sound on Macintosh, MS-DOS, or Windows systems. Prices are typical for educational software, but almost anything in the catalog can be previewed for 30 days.

Troll Associates, 100 Corporate Drive, Mahwah, N.J. 07430; 1-800-526-5289 ext. 1119; 1-201-529-9347 (FAX). Troll distributes educational software for the Apple II, IBM/compatible, and Macintosh. When I wrote to them four years ago, I received "Troll Micro" (1993) by return mail. There is an emphasis on grades K-8 in their descriptive catalog.

MAIL ORDER HOUSES

Mail order dealers are distinguished from educational supply houses because their descriptions are shorter, their inventories are smaller, their prices are lower, they get a lot of personal orders, and they may be out of business when

you call them. Despite their name, mail order dealers do more business by phone than by mail. In years of buying from these dealers, I have had few problems, and they will get something to you in a hurry if you will pay for express delivery. If your computer base is IBM/compatible or Apple Macintosh, take the time to go to the library and find out from advertisements in back issues of major computer journals how long the dealer you are considering has been in business. Some software dealers were listed under educational supply houses, above. The dealers with the largest Apple II inventories are the following.

Big Red Computer Club (BRCC), 423 Norfolk Drive, Norfolk, NE 68701; 1-402-379-4680. Before Big Red went out of business at the end of 1994, they distributed the better shareware titles, commissioned a few of their own programs, and served as the sole source for inventory stocks of several publishers who discontinued their Apple II software lines. As a BRCC member, I received their bimonthly magazine, *Scarlett*, which died when they did.

Compsult, P. O. Box 5160, San Luis Obispo, CA 93403; 1-805-544-6616 (inquiries); 1-800-676-6616 (orders). Compsult had a good inventory of software closeouts with Amiga, Apple, Atari, Commodore, IBM, and Macintosh titles. Most of these commercial programs sell in the $5 to $15 range. The list was long, but the supply of many items was limited, and the list was never updated. My last two letters to them went unanswered.

LRO, see Other World Computing.

Other World Computing (formerly LRO), 224 W. Judd Street, Woodstock, IL 60098; 1-800-ASK-4LRO. Primarily a supplier of hardware, LRO sells productivity software such as **Switch-It** and **Pointless**, and they offer proprietary support for the New Concepts line of titles such as **Prism**.

Scantron Quality Computers, 20200 Nine Mile Road, St. Clair Shores, MI 48080; 1-800-777-3642. In addition to a strong inventory of in-print software, Quality Computers publishes *Enhance*, an extensive, quarterly catalog with 20 pages of reviews and advice to teachers, especially. In 1993 they took over **AppleWorks** and **AppleWorks GS**, the most popular Apple II titles, updated both and provided technical assistance for them. For a while they published *II Alive*, the last glossy Apple II magazine. As noted elsewhere, Quality has an extensive hardware inventory.

I had asked if she had any brothers or sisters old enough to come to computer camp. She was very young and pleased that I was interested, so she chattered away about her large extended family, beginning with "Missy's my half-sister_" and ending with "Momma is real nice, but she's not my real momma. My real momma, she tied me to a chair and set the house on fire. She was a mean momma, wasn't she?"

I don't think she remembered this. It flowed out too cheerfully. It was a tale she had heard, more than once, over the breakfast table, interesting, but not tragic, and only vaguely involving her.

PERIODICALS

Why, you may wonder, is there much more in the pages that follow about the Apple II, an old, outdated computer, than the Macintosh, MS-DOS, and Windows systems combined? The first reason is that people with glitzy new machines don't donate them to rural or inner-city computer camps. The few schools with up to date computer labs are the lucky exceptions. The second reason is that anyone who wants a Macintosh or PC magazine can find it at the nearest magazine stand, while folks using old Apples need to know where to go.

General Interest Magazines

Compute, COMPUTE Publications International Ltd., 1965 Broadway, New York, NY 10023-5965; 1-800-727-6937 (subscriptions); 324 W. Wendover Avenue, Suite 200, Greensboro, NC 27408; 1-910-275-9809.

One advantage of *Compute*, to this reader in rural Kentucky, was its availability in retail chains such as Wal-Mart. A typical issue contained 150 glossy pages of advertising, features, columns, and reviews. Although 77 percent of the readers use Windows, according to *Compute* editors, many of these will have a second computer at home or at school, typically a Macintosh. The editorial content reflects the IBM-system priority, but there is a serious attempt to include new computers as well as peripherals that work on more than one system. I read *Compute* regularly in 1993, but have not seen it recently.

Computer Shopper, One Park Avenue, 11th Floor, New York, NY 10016; 1-800-274-6384.

The December 1993 issue of *Computer Shopper* had 910 pages, each measuring 9-1/2 by 12-3/4 inches. I paid the $3.95 newstand price. A subscription cuts the cost by more than half. *Computer Shopper* is a bargain by any description. As the name suggests, most of pages contain advertising, so virtually any vendor who sells computers, peripherals, or software for IBM/compatible systems is represented, as are many Macintosh suppliers, and a few for other systems. The editorial content looks thinner than it would in a less bulky magazine. Descriptive lists of bulletin board systems and computer user groups are an important regular feature as is the complete, comprehensive, alphabetical list of advertisers and their products. I've not read it recently.

GEnieLamp, Digital Publishing Roundtable, Genie: DIGIPUB (see Genie under bulletin board systems)

There were separate *GenieLamp* publications for each of the major computer systems. Although each monthly *GenieLamp* originates on the Genie network and draws much of its material from what is uploaded there, *GenieLamp* is available on CrossNet, Internet, America Online, and Delphi, as well as smaller bulletin board systems. Look to *GenieLamps* on line for news, humor, product announcements, and reviews.

Online Today (see CompuServe under bulletin board systems)

Apple II Magazines

There is no longer a mass market magazine supporting the Apple II. The last, which died in 1997, was *II Alive*, published by Scantron Quality Computers, a mail order supply house. Among the magazines mentioned in this section are several published on disk only or with both paper and disk editions. Not included are the publications of computer clubs, user groups, and suppliers.

A2-Central, P.O. Box 11250, Overland Park, KS; 1-913-469-6502

A2-Central, formerly *Open-Apple*, was published monthly from 1985 to 1995. The magazine was available on 3.5-inch disk from the beginning, but the paper edition ceased during the summer of 1993. New users found *A2-Central* too technical, but those who had owned their computers for a while often found in *A2-Central* the solution to persistant system problems, software hangups, and hardware incompatibilities. Until 1994, the magazine had a detailed annual index, and past issues are available from *Shareware Solutions II*. A row of these on your shelf is an excellent way to handle your next computer problem. Issues feature an extensive letters column with readers (including me) sending problems and solutions. The disk edition included freeware and shareware programs selected by the editors.

The Apple Blossom, c/o Steve Cavanaugh, Apple Blossom Publishing, P.O. Box 120434, Boston, MA 02112-0434

The Apple Blossom is published bimonthly and costs $16 a year in the U.S., a little more elsewhere. A typical issue has twelve to fourteen 8-1/2" by 11" pages crammed with up to date information about the Apple II computer. There are frequent interviews with programmers and software publishers. There is

something of a "how-to" hardware emphasis, but software is not neglected, and HyperCard, in particular, has been featured. The first year of publication can be downloaded from the online services, so you can find out what the magazine is all about without subscribing.

AppleWorks Forum (see Clubs and User Groups, below)

Hyper Quarterly, c/o Steve Cavanaugh, Apple Blossom Publishing, P.O. Box 120434, Boston, MA 02112-0434

HyperCard is not dead for the Apple IIGS. Cavanaugh's *Hyper Quarterly* was lauched in the summer of 1997 on two 3.5" disks with some interesting and useful stacks. It remains to be seen how many of us will pay $35 per year for the quarterly, but I, for one, am satisfied.

GS+, EGO Systems, P.O. Box 15366, Chattanooga, TN 37415-0366; 1-800-662-3634; 1-615-332-2087 (technical support); 1-615-332-2634 (FAX)

When I wrote to *GS+* for subscription information, the reply was signed by a former student, so there may be some bias in what follows. *GS+* was published bimonthly with both paper and disk editions. Programmers, especially, liked GS+, because source codes were provided to permit readers to learn from and modify the programs; however, you didn't need to be a programmer to use the programs in the disk edition. The articles were very informal, but not superficial. Only the Apple IIGS was supported. There were full page ads from Apple vendors, and the many reviews are not always complimentary. Ego Systems continued to sell back issues of *GS+* until July of 1997. It is too soon to say whether another distributor of back issues will appear, but keep an eye on Joe Kohn's *Shareware Solutions II*.

Juiced.GS, c/o Max Jones, 2217 Lakeview Drive, Sullivan, IN 47882

I was one of those who were surprised by the appearance of this sprightly looking newsletter at a time when Apple II publications were folding, not starting. Published quarterly for $14 a year in the U.S. with 24 pages of information on 8-1/2" by 11" sheets, the emphasis is more on software than hardware, although the latter is not neglected. I'm happy to be getting it.

Kula Index, Kula Software, 2118 Kula Street, Honolulu, HI 96817; 1-808-595-8131

The *Kula Index* provides a major service to those wishing to locate articles and reviews in computer magazines. You may purchase an index for a given year

or for a given periodical over a number of years. The indices are on disk in **AppleWorks** databases and place a wealth of information at your fingertips. You do own **AppleWorks**, don't you? Write to Kula for details.

PongLife, GEnie A2 Library

The first issue of *PongLife* was uploaded to Genie for free distribution in February, 1994. Created with **HyperStudio**, the *PongLife* stacks were gaudy, noisy, badly spelled, unorganized, and full of life. After the first issue, the *PongLife* editorial staff split, and there were intemperate messages online between the two factions. Even if *Ponglife* does not revive, you should download a copy of the original from the Genie A2 library. A computer camp with high school students might well decide to publish a camp stack with *PongLife* as a model.

Real Times, Disabled Children's Computer Group (DCCG), 2547 8th Street, 12-A, Berkeley, CA 94710.

A one-year membership in DCCG is $30, which entitles one to the quarterly newsletter, *Real Times*, with four pages or more of news and product announcements relating to "technology resources for people with disabilities." Although it took DCCG three months to answer my letter of inquiry, I received specific advice concerning a deaf child in my camps along with two past issues of *Real Times*. On the other hand, despite the number of handicapped children that I serve, I have not subscribed.

Script-Central, P.O. Box 11250, Overland Park, KS; 1-913-469-6502

Another 3.5-inch disk publication by Resource-Central, *Script-Central* provided Apple II users assistance bimonthly with **HyperCard GS** and **HyperTalk**. You received tools, buttons, XCMDs, and helpful advice in amusing **Hypercard** format. Spelling wasn't a priority, but stacks that worked were. *Script-Central* went out of business with Resource-Central, but Shareware Solutions II will sell you the back issues, and I recommend them. In February of 1994, Apple released **HyperCard GS** for free download to online subscribers, and back issues of *Script-Central* became even more desirable.

Softdisk and *Softdisk G-S*, P.O. Box 30008, Shreveport, LA 71130-0008; 1-800-831-2694

Booting an issue of *Softdisk* or *Softdisk G-S* was rather like opening presents from relatives who take time choosing gifts, but don't know you well. After two issues with little but good intentions to appreciate, you'd be presented suddenly with something unexpected, useful, and/or entertaining. Games or

educational programs for young computer campers appeared about once every three issues, but more often than that the computer owner would find programs worth having. An invaluable feature for me was the quarterly "Industry Connection," which provided pages of names, addresses, and phone numbers for Apple II suppliers, writers, and publishers. Alas, both publications are no more, but Softdisk will send you a catalog and sell you back issues.

Shareware Solutions II, 166 Alpine Street, San Rafael, CA 94901

Joe Kohn was writing a shareware column for *inCider/A+* when it ceased publication, and he named his magazine *Shareware Solutions II* for reader recognition. In addition to reviewing shareware available, typically, from five to fifteen dollars, Kohn provides chatty descriptions of "Apple events" and new Apple products, together with dealer names, addresses, and phone numbers. He originally promised his subscribers twelve 12-page issues at least bimonthly, and he began by publishing 20 pages, but he no longer meets the bimonthly schedule; however, there are major compensations. *Shareware Solutions II* is created entirely on an Apple IIGS and is very attractive. Those who peruse the Apple Roundtable on Genie are familiar with Joe Kohn's helpful contributions there, and he brings the same expertise to his new publication. What is more, he has jumped with both feet into the thankless task of preserving out-of-print software and no-longer-published magazines, advertising these regularly in *Shareware Solutions II* at bargain prices. If one Apple II publication remains essential, this is the one. The price is $25 for six issues in the United States.

Studio-City, P.O. Box 11250, Overland Park, KS; 1-913-469-6502

For users of **HyperStudio** stacks, *Studio-City* was yet another excellent 3.5-inch disk publication from Resource-Central featuring articles of advice, tutorials, examples, clip art and sounds, and mail. There were six issues a year for $48 if you bought disks as they came out or $36 if you waited to collect them as a set. I don't believe anyone is selling back issues at the moment.

TEXAS II, Kingwood Micro Software, 2018 Oak Dew, San Antonio, TX 78232; 1-210-490-6373

The subtitle for current issues of *TEXAS II* is "An international disk newsletter for users of **AppleWorks**." A 6-issue subscription used to consist of six issues of *TEXAS II* and three issues of *TEXAS II on MACROS*, but I am not up to date on the publication. *TEXAS II on Disk* is available only to *TEXAS II* subscribers, most of whom buy it. There is an emphasis upon **UltraMacros** with the earlier versions of **AppleWorks** and the built-in macros of **AppleWorks** 5.1. There is

an abundance of excellent material, but be prepared for dense syntax: no fluff here! Nonsubscribers can check Beverly Cadieux's frequent uploads to the Genie bulletin board to gauge the consistent high quality of her work.

II Alive, 20200 Nine Mile Road, St. Clair Shores, MI 48080; 1-800-777-3642

II Alive is dead. The less said about why, the better.

Macintosh Users

Note (1997): This information was correct in 1994. I hope that it still is.

Diskworld, Softdisk Publishing, P. O. Box 30008, Shreveport, LA 71130-0008; 1-800-831-2694; 1-318-221-8718.

Published monthly on a 3.5-inch disk, *Diskworld* requires a Macintosh Plus or later system and 1 MB of memory and provides programs ready to load and run or save to hard disk. The principal categories are productivity and utilities, education, graphics, and fun and games. Back issues may be ordered at a discount, although a few programs on the earlier disks are not compatible with System 7. Read the description of *Softdisk* under the Apple II heading for additional information about disk-based journals.

DTPublisher, Softdisk Publishing, P. O. Box 30008, Shreveport, LA 71130-0008; 1-800-831-2694; 1-318-221-8718.

Similar to *Diskworld* in format and philosophy, *DTPublisher* is devoted to desktop publishing and requires an appropriate printer, supporting software, and hard disk for its applications. Individual issues emphasize fonts, graphics, and templates.

Macworld by Macworld Communications, Inc., 501 Second Street, San Francisco CA 94107; 1-303-447-9330(subscriptions), 1-415-243-0505 (editorial office).

Macworld is a beautiful, thick glossy magazine with over 200 pages of editorial matter and advertising. In addition to news, reviews, and technical advice, you will find a list of hundreds of hardware and software products that were reviewed previously together with their three to five star ratings. Products receiving less than three stars are not listed after the first review. If the personal touch is absent, there is ample compensation in an abundance of glittering goodies.

Journals for MS-DOS and Windows

On Disk Monthly, Softdisk Publishing, P. O. Box 30008, Shreveport, LA 71130-0008; 1-800-831-2694; 1-318-221-8718

On Disk Monthly is Softdisk's general interest magazine on disk for the modern IBM/compatible system with 640K. MS-DOS 2.0 will run the first 49 issues, but MS-DOS 3.3 is needed for later issues. For a description of the publisher's philosophy, see *Softdisk* under the Apple II user heading.

PC Magazine, Ziff-Davis Publishing Company, L.P., One Park Avenue, New York, NY 10016; 1-800-289-0429 (subscriptions); 1-212-503-5255 (editorial office)

Magazines for IBM computers and their clones come and go with great regularity, but *PC Magazine* has been around for over a decade and is now published every two weeks. Although the majority of its 400-odd glossy pages are devoted to advertisements for new products, there is ample space for features, predictions, columns, technical data, and reviews. The classified section in the rear contains some less expensive alternatives to the featured new products. On balance, *PC Magazine* is an excellect source of information at a reasonable cost.

PROGRAMS FOR PEANUTS

This section is devoted to inexpensive sources for software: shareware, freeware, and public domain software. Briefly, shareware can be acquired without charge, but you send a fee to the author if you decide to keep it. Freeware doesn't cost anything, but you cannot charge others for it or incorporate it into your own programs. Public domain files are yours to use any way you like.

There are a number of suppliers that specialize in these types of software. The least expensive disks cost a dollar or less, are labelled only with a number, and no operating system is supplied, since the use of an operating system (such as Apple DOS 3.2 or 3.3, ProDOS, GS/OS...) would require that the system manufacturer (Apple Corporation, for the cases cited) receive a royalty. The user must install the appropriate operating system on the computer, swap disks, and run the program. It is common to find Apple programs written in Integer Basic, which was phased out years ago and requires an old Apple system disk with an Integer Basic file. Should you need one, it can be obtained from Apple dealers,

who may look at you incredulously, or a user group. Public domain programs are sold "as is" and many are incomplete or contain serious flaws.

Because these dealers operate with a slim profit margin, they can be victimized by persons who donate nice looking programs containing computer viruses. Reputable dealers take as many precautions as possible to avoid this possibility, but bear it in mind when you purchase inexpensive software for systems with installed hard disks. If you are operating a computer camp with multiple computers, test all new software for viruses using a computer designated for that purpose, preferably a computer without a hard drive.

Dealers who charge a little more pay computer manufacturers their royalty fee and include operating systems. They also do a better job of excluding programs that are trivial or have serious flaws. There are thousands of public domain programs, sorting out programs with merit is not a trivial task, and the dealers are entitled to the small compensation they ask. Most offer quantity discounts.

I have ordered software from all of the following, and I have gotten fair value for the small cost of my orders. If you want to explore these inexpensive sources, shop around until you find the dealer who gives you the level of service you want to pay for.

Kula Software, 2118 Kula Street, Honolulu, HI; 1-808-595-8131

I was surprised in February of 1994 to hear Kula Software mentioned on the GEnie A2 Roundtable. I had not seen a Kula advertisement in some time, and I was pleased to find them still in business. In addition to furnishing shareware, freeware, and public domain titles, they publish the *Kula Index*, which was listed under periodicals. Try them. Better yet, convince your boss you need to go there to pay them a visit!

Software of the Month Club, 5816 Dryden Place, Carlsbad, CA 92008; 1-619-931-8111; 1-619-931-8383 (FAX).

All that I know about the Software of the Month Club I read on the GEnie A2 Roundtable, Category 4, Topic 17. Quoting Message 119 directly: "They send me a lot of junk, but every now and then I get a gem." As the name suggests, you receive assorted software on disk for a fixed monthly fee.

ELECTRONIC BULLETIN BOARDS

Electronic bulletin boards or bulletin board systems (BBS) are becoming increasingly important as sources of computer programs. With the cost of a high-speed modem (telephone interface) slipping below $100 and online services available as local calls within most larger cities, this is becoming an economical source as well. In addition to the major online systems, such as AOL and CompuServe, there are also systems run by hardware suppliers, software suppliers, computer clubs, and individuals.

Online Systems

The major online systems are widely advertised, take elaborate precautions against computer viruses, can be accessed by local calls through electronic networks like Tymnet and Telenet in large cities, and offer a multitude of services. The systems below have thousands of public domain, freeware, and shareware files available for subscribers. Parameters for accessing these systems are summarized, but, before using this table, consult the literature that arrived with your modem or terminal software. These may provide information that is missing from the table below that was compiled in 1994.

Modem Parameter	America Online	Compu-Serve	Delphi	Genie
Baud rate, hundreds	12, 24, 96	12, 24, 96	12, 24, 96	12, 24, 96
Data format		OR		OR
Data bits	8	7 8	8	8 7
Parity	N(one)	E(ven) N(o)	N(one)	N(o) E(ven)
Stop bits	1	1 1	1	1 1
Duplex (echo)	Full (off)	Full (off)		Half (on)
Voice phone to join	1-800-827-6364	1-800-848-8199	1-800-695-4005	1-800-638-9636
Modem phone to join	Tymnet or Telenet	1-800-346-3247	1-800-365-4636	1-800-638-8369
Initial reponse	Must use system	Ctrl-C	Rtn, rtn	HHH
Username:	software to log	PHONES	JOINDELPHI	XTX99458,
Password:	on	*	NT33**	PROTERM**

NOTES: * Must be obtained from CompuServe
** Many other passwords are accepted the first time you log on

America Online, 8619 Westwood Center Drive, Vienna, VA 22182

When my modem arrived, it included an informative booklet and a 3.5-inch disk to be used in accessing America Online. You can get your own disk by using the voice phone number above. The disk provides a well-designed modem utility program that allows a new user to log on to America Online, explore its features, and download programs from an extensive list of shareware, freeware, and public domain files. The icon and menu interface is designed for convenience and ease of use. In addition to its software library, America Online includes computer forums, E-mail, and reference libraries for use by its customers. It is probably the easiest to use of the online services, particularly if you own a newer computer, and their advertisements seem to arrive almost daily.

CompuServe Incorporated, P.O. Box 20212, Columbus, OH 43220

With over a decade's experience as a general purpose online system, CompuServe has learned to listen and repond to its customers. Among the services useful to computer camp operators are an electronic mall, support for various computer systems, forums, E-mail, and an excellent library of files for downloading. Should a camp be able to afford access time for its students, the range of topics on CompuServe suggests its value for this purpose. In addition to other services, CompuServe publishes *Online Today*, a monthly magazine that highlights uses of its service by subscribers, lists new forums, and suggests programs for downloading.

Delphi, General Videotex Corporation, 3 Blackstone Street, Cambridge, MA 02139

Besides offering full access to the Internet, the educational electronic network, Delphi has been on the scene since the mid-80's and offers computer user groups, thousands of software files to download, and many special interest forums. It has recently become an Apple II hangout following a major price change on Genie (below).

Genie, P.O. Box 6403, Rockville, MD 20850

The smallest and most recent of the major online services, Genie offers special value to computer camps with an Apple II base. The "A2/A2Pro Roundtable" serves the Apple II community and its programmers. People with problems get prompt, friendly service. Thus, an August 26 request, "I'm looking for a program called VidClip," gets the August 28 response, "I have VidClip... If you would like the program..." Both IBM and Macintosh users log on and

comment that they get quicker responses about their computers on the A2 Roundtable than on the larger, more impersonal roundtables designated for their own systems. The A2 library has 20,000 files available to users, indexed by author, title, and key words. The *A2 Disk of the Month*, featuring interesting information exchanged on line together with selected Apple programs, might well have been listed above with the computer magazines and incorporates the Apple II version of the monthly *GenieLamp*.

Commercial Vendors

There are a number of excellent bulletin boards managed by hardware and software vendors for problems, inquiries about their products, and downloads of "patches" to correct bugs in or improve the performance of their software; however, there is little other software available from these sources.

Sponsor Organizations

In centering upon computer interests, it is possible to overlook the many bulletin boards devoted to other subjects. For example, Skyline (617-497-4168) is an astronomy BBS updated on Friday evenings by the editors of *Sky & Telescope*. Astronomy has nothing to do with computer camps, of course -- unless an astronomy club is the computer camp sponsor! Sponsors can be expected to know where to find advertisements for bulletin boards in their specialty.

Local Boards

If you ask your computer dealer, you may find an individual or institution that operates a local bulletin board. For example, your college or university library may answer inquiries about its holdings on line. Such BBS's are not apt to serve as a source of software, but they may provide older campers with a place to log on and learn to use modem software if you do not let the kids become a nuisance. Be careful about computer files downloaded from individuals who rarely have the resources to check carefully enough for computer viruses.

COMPUTER CLUBS AND USER GROUPS

Computer groups and clubs come in all shapes and sizes. They cover a wide variety of interests, and range from individual operations like Tom Zuchowski's Eamon Adventurers' Guild, through cooperative organizations like the National AppleWorks Users Group (which has died), to suppliers of commercial software like the Big Red Computer Club (which has died, also). The alphabetical list that follows is incomplete and, inevitably, out of date.

Anchorage Apple Users Group, P.O. Box 110753, Anchorage, AK 99511-0753; contact Timothy Odell 1-907-373-7459

The Anchorage Apple Users Group is the first, alphabetically, of over 100 clubs from the United States listed in the January/February 1994 issue of *II Alive*. Also listed were clubs in Australia, Canada, England, Germany, and Italy. There is no particular reason for you to contact the Anchorage club, but you should look for clubs near your own community. A local club is an excellent place to meet other people using the same kind of computer, to swap and sell used equipment, and to find solutions for common problems. Apple Corporation has used clubs in the past to assist in performing upgrades and distributing patches to correct bugs in system software.

It's nice to know a local person to call when your computer quits, someone who will say to you:

> Don't panic. That happened to me, too. Turn off the computer, open the lid, and ground yourself by touching the box on the left -- the power supply. Now push gently, but firmly on to each of the chips on the mother board. If that doesn't work, remove the cards one by one from the slots in the back of the computer, clean their contacts with a soft eraser, ground yourself again, and replace them. If that doesn't work, call me back, and I'll come over to swap parts with you and see if we can isolate the problem.

Dues to local clubs start around $10 annually and go up, but none are very expensive. Many local groups publish newsletters or operate bulletin boards.

The Eamon Adventurer's Guild, Tom Zuchowski, 7625 Hawkhaven Drive, Clemmons, NC 27012-9408; 1-910-766-7490

The Eamon series is described later during my review of adventure games. What I would like to say here is that the series survived because an individual thought it was worth preserving, maintained an archive with original and updated disks, furnished the major online systems with bugfree software, encouraged others to write Eamon adventures, reviewed their work, and published a newsletter to keep the series alive, listing places to obtain the adventures. Recently one of my 17-year-old former campers received his first computer. His mother passed along his first two questions to me. "How do I get the computer started?" and "Will it run the (adventure) disk you gave me?" The Eamon series is

addictive... and highly recommended. Membership was $7 annually. I don't know what it is now. Tom refuses to make a profit. If he has a positive balance, it goes back to the members.

National **AppleWorks** Users Group (NAUG)

Although it was advertised only once by Apple Corporation in all the years they distributed it, **AppleWorks** was and is the most widely distributed program for the Apple II. It is no surprise that there was a large, active user group dedicated to its use. The National **AppleWorks** Users Group published the *AppleWorks Forum* ten times annually, reviewed and published **AppleWorks** templates and macros, published a 9-page list of 600 computer and software manufacturers, and provided volunteers to assist with **AppleWorks** problems. NAUG had an independent BBS and operated **AppleWorks** forums on America Online, CompuServe, and GEnie. The NAUG "Electronic Forum" on Genie received its 85,000th call in the Fall of 1993 and continues to operate although, regretfully, NAUG does not. Joe Kohn of Shareware Solutions II acquired publication rights to their library and will furnish their disks to you very cheaply.

CD-ROM COLLECTIONS

The technology that stores entire encyclopedias lends itself as well to the storage of shareware, freeware, and public domain programs. An example is **Shareware Extravaganda**, which offers over 25,000 files for IBM/compatible computers on four CDs for $89. Assuming that programs can be extracted from the original disks and then copied for use on other computers, this disk, or others like it, should be considered by any camp having at least one computer with a CD drive. Similar disks are available for other systems, including the Apple II and Macintosh.

ORIGINAL PROGRAMS AND STACKS

If the computer camp is particularly short on funds, or the sponsor is seeking a specialized program not available elsewhere, the computer camp operator can always sit down and write the requisite programs. There is no need for highly sophisticated programs with pages of code and hand-crafted graphics. Very (very!) simple programs will satisfy children if the programs are intelligently thought out and make use of the children's names and familiar features of their community. At my first computer camp I churned out one new program every three days, and half of these are still on the agenda of the camps I run today with six boxes full of software. Even if you are not an accomplished programmer, you can load and list public domain programs and change their PRINT statements to give them a local flavor. If you can't, there's a high school student at your school who can!

One of my eight-year-olds is driven to camp by his mother. He missed camp one day, and when I asked him about it later, he said, "My mother couldn't get through the mud." When the mountain clay gets wet, it is slicker than wet snow, so I didn't doubt his story; however, when I saw his mother, she said he told her, "There's no camp when it rains." I conclude that he preferred bed to camp that morning.

A brother kept poking his older sister until I had had enough. "Either stop poking her," I told the boy, "or don't come back." Of course he said, "I won't come back!" and he didn't, either.

I was out in the garden," Harlan explained, "and out came this big snake, so I went to the house and called Ella, and she come out and killed it."

"Why, Harlan," someone asked, "why didn't you kill it yourself."

"Aw," said he with a grin, "I didn't want to deny her the pleasure."

Some of these have grown up and had kids of their own without shedding their nickhames. The girls, Sugar, Cricket, Tootsie, Bambi_, are luckier than the boys, Bobcat, Booger, Mudhole (Mud, for short), Bimbo, Goat, Buster, Harbo, Chig, Skeeter, Beezer, Dobbs, Dinger, Butthole, Redbird, and Cedarhead.

Choosing and Using Software—Selected Titles for Use in Computer Camps

What follows is arbitrary. Although I operate a computer camp for children between the ages of seven and twelve in an economically impoverished area of the country, your children may be younger, older, or more affluent. I have a limited budget and old computers, so I often use older programs that are no longer in print or easily available. Read the following comments less with an eye to getting the same software than to finding software with similar characteristics. After each title, I give the original publisher and the computers I happen to know will support the program. Before assuming the program will not run on your system, look for it. This is especially true if you are using "non-academic" computers such as the Amiga, the Atari, or the Commodore 64/128.

I divide camp software into five categories, tutorial disks, creative software, educational software, "adventures," and games. Tutorial disks are those chosen by me, not the children, and used for lessons. Campers may, but are not required to, use them at other times. Creative software includes word processing, music, and drawing programs that use the child's creative abilities. Some creative activity is common in educational software, also, but I define educational software as material which emphasizes mental effort on the part of the student. Adventures are games, but games involving reading, keyboard use, map making/reading, pattern recognition, or puzzle solving. My final category, games, is for fun, typically disks with little reading and graphic interfaces that use joysticks. All five categories have subdivisions, which I will discuss as I come to them.

TUTORIAL DISKS

There are only two disks that I require all campers to use. The first is **Camp Master**, for 5.25" drives, or **CampMaster**, for 3.5" drives, which I wrote to introduce children to computers and to give them something to do while they wait their turn to get software. Versions are available for older Apple IIs and the Apple IIGS. When this book has been published, I will add Macintosh and MS-DOS versions. The second disk is Terrapin's **Logo PLUS**, which children use for two or three of their ten lessons. I like, and use, **Apple Logo II**, but **Logo Plus** is less expensive, especially in the 10-Pak format. At one time Apple published a 64K version of **Apple Logo**, and I have two of these to use with older computers. **Logo** is sufficiently standardized that I am able to use the Terrapin and Apple programs simultaneously. Terrapin also publishes **PC Logo 4.0** for MS-DOS

machines, **Logo PLUS** for the Macintosh, **Kinderlogo** for the Apple II and Commodore, and **Commodore Logo** for the latter. The 3-D version of **Logo** published in 1993 by the Byte Works is worth considering if you can afford it. It is doubtful that **Logo** will be available as shareware or freeware as long as it remains the language of choice for elementary school children.

If you are in a schoolroom setting with several computers linked to a server, you may be more influenced by the cost of a site license than the cost of individual disks or a 10-Pak. It is sometimes possible to get a site license for a not-for-profit computer camp as a charitable donation. You can ask!

Camps with older children should consider mandatory lessons in elementary word processing. There are now several excellent word processors available as freeware, including **Apple Writer**, cited below. I have been using two lessons on computer graphics, using **PaintWorks Plus**, which is not my favorite graphics package, but is the one most commonly given to the camp.

It is possible to teach a tutorial with different disks for each computer. For example, some older Apple programs use the keyboard diamond I-J-K-M for cursor movement up, left, right, and down, respectively. Other programs, especially games, have the child use the left hand to press A and Z for up and down movement and the right hand on the arrow keys to go left and right. At one time I taught the I-J-K-M keyboard controls for tutorial purposes, using six or seven different Learning Company disks. Later I added a lesson using these keys to **Camp Master**. The extended keyboard used with newer computers has four arrow keys, and teaching the I-J-K-M alternative is unnecessary.

MacIntosh, Windows, and Apple IIGS users need to learn to use the graphical interface, but since that interface is included on many disks, it is not necessary to have a dozen identical disks to teach these skills on twelve computers. Any twelve disks that use the interface will do. In most cases, all that is needed is to boot the system hard disk.

The functions of the PF-keys on IBM keyboards are not standardized, but enough of them have common uses are to justify a PF-key tutorial. Again, the computer's hard disk should provide an adequate number of examples.

WRITING, DRAWING, AND COMPOSING

Writing

I have already indicated the possibility of including a word processing program as a tutorial for older children. In any event, word processing needs to

be included as an aid to creative writing. Older children can work on one computer, save their work on disk, and move to another computer to print it, but my younger children do not choose word processing software unless they are sitting at a computer that has a printer. As a result, my room, which has thirteen computers, gets by very nicely with a single "printing program" for each printer. Here are my opinions concerning the word processors that I have used. They are in alphabetical order.

AppleWorks, currently by Quality Computers (highly recommended, but not for young kids); Apple II series.

Anyone who owns an Apple computer more recent than the Apple][+ should own **AppleWorks**. The latest version, **AppleWorks 5.1**, was published in 1994, but **AppleWorks 2.0**, **3.0**, and **4.3** are also efficient systems, especially when supplemented by Timeout **Ultramacros** and others of the Timeout series of enhancements. The Apple IIGS version, **AppleWorks GS**, will not work on older Apple models, but it was upgraded in 1994 and has many attractive features, especially WYSIWYG (what you see is what you get) design. **AppleWorks** is much faster than **AppleWorks GS** when printing. Get version 1.1 of **AppleWorks GS**.

Having said that **AppleWorks** is indispensable to most Apple owners, I also think that it requires more instruction than is acceptable for computer campers younger than 12. Yes, buy the program, but don't set it out for the children to use.

Apple Writer by Paul Lutus; download from GEnie, A2 Roundtable; Apple II series.

At about 70 cents for a download or $3.00 for a freeware disk, **Apple Writer** is the clear first choice when cost is the major consideration. There are, in addition, a few advanced users who prefer **Apple Writer** to more modern programs for the ease with which **Apple Writer** can be programmed for individual use. **Apple Writer**, like **AppleWorks**, is difficult for children under 12 and is not designed for use on the Apple][+.

Bank Street Writer by Brøderbund Software (recommended); Apple II series; IBM/compatibles; Macintosh

Bank Street Writer was written with kids in mind, but it has enough features that one of my graduate students used it a decade ago ago for his Master's thesis. It's not unusual for a camper to come to me and say: "I just want to type." I hand them **Bank Street Writer**, and later I offer to save and print

what they have written. The program has excellent error trapping, and a novice can use it the first time without written instructions. Features such as underlining, using boldface, or changing type size are easy to master, but few children under high school age will be interested. The original 64K **Bank Street Writer** is gone, and the 128K version for the Apple //e and //c has been replaced by **Bank Street Writer III**. **Bank Street Writer Plus**, which has a spelling checker and other features, is a little expensive for computer camp use. The Macintosh version is **Bank Street Writer SV**. Before deciding not to buy **Bank Street Writer** for your campers, consider the possibility of using it with adults! Teachers who are afraid of computers and the parents of your campers are an ideal audience for this program. One summer I ran a one-week camp for adults, and **Bank Street Writer** worked pretty well. Another advantage for me: **Bank Street Writer** will work on any Apple computer from the][+ to the IIGS. Older word processors lack **Bank Street Writer**'s capabilities, while newer ones won't run on older computers.

Bilingual Writing Center by The Learning Company (recommended, if you need it and can afford it); Macintosh.

An "enriched" version of **The Writing Center** (below) in both English and Spanish.

Children's Writing and Publishing Center by The Learning Company (highly recommended); Apple II series; IBM/compatible; see, also, **The Writing Center.**

The **Children's Writing and Publishing Center** (CWPC) combines ease of use, graphics, and text in a word processor accessible to children in the 3rd grade and up. Young children can use, but will enjoy **Print Shop** (see below) more; however, I recommend **CWPC** to most of my children. Output from the program is in large, legible print, and a child's two or three-paragraph essay fits nicely with a graphic on an 8-1/2 by 11 inch page. There are only(!) 137 graphics available with the original disk set, but additional disks can be ordered, and I predict that more will appear in public domain catalogs as the program grows in popularity. Color printing is supported if your printer has that capability. There are versions for the Apple II, Macintosh, and IBM/compatible systems.

I would like the program better if it gave young children fewer opportunities to change the system setup, something better done by teachers. As a precaution, write-protect the disk.

FrEdWriter and **FreeWriter**, available from most public domain suppliers (limited recommendation); Apple II series

FreeWriter was written and distributed by Paul Lutus to interest people in his commercial word processor, **Apple Writer**. **FreeWriter** is still available from public domain supply houses. It is ProDOS-based and is not intended for use with an Apple][+. The 80-column screen is installed automatically when the program is booted, and no instruction is needed to begin a manuscript; however, a series of help screens are loaded with the program and are just a keystroke away if needed.

Somewhat disconcerting to those unfamiliar with it, the display screen scrolls to the left as users reach the right hand end of lines in the 80-column default mode. As an experiment I tried a 120-column screen, and the display scrolled without difficulty to provide it. Any time the ESC key is struck the header changes to a ruler, so that users know where they are in the manuscript. **FreeWriter** will accommodate widths from 1 to 240 columns.

At the time that the Genie A2 Roundtable received permission to release **Apple Writer** as freeware, **FreeWriter** was described as flawed by the lack of a print command; however, material written with **FreeWriter** can be saved on to a formatted disk and printed from that by other programs. One was provided on my freeware disk. You will need to know the save-disk's volume name, and the program insists that you get upper and lower cases right before it allows you to save or load. The column width used to create the document is not saved, and a reloaded file will be in the 80-column default mode. The save, load, and print process isn't one for young computer campers, but the computer room operator should have no trouble.

Computer campers who "only want to type" will find **FreeWriter** adequate for their purposes, but it is recommended that the instructor eliminate horizontal scrolling by specifying, say, a 65-column width. Because the program does not use a 40-column format, it is not suitable for use with composite (TV-type) monitors.

FrEdWriter added printing capabilities to **Freewriter**, contrary to the wishes of the copyright owner. With the availability of **Apple Writer** as freeware, neither **FrEdWriter** nor **FreeWriter** appears to be a good idea; however, there are versions that will run on an Apple][+, and the newly released **Apple Writer** will not.

The Newsroom by Springboard (recommended); additional **Clip Art Collections** (graphics) are also recommended; Apple II series; Atari; IBM/compatibles

I like **The Newsroom.** It requires little memory (64K), and 9-year-olds can learn it well enough to print graphics with minimum supervision. Because **The Newsroom** was intended for school newspapers, it features double columns and graphics smaller than those in **Print Shop** or the **Children's Writing and Printing Center.** The small size disappoints the younger children, but makes the program more appropriate for longer essays by older children. Younger children continue to use the program despite the smaller graphics simply because the program allows so many pictures on each screen, and the **Clip Art Collections** are clever and cover a variety of topics.

The program will use a mouse, a joystick, or the keyboard, and that is the recommended order.

During computer camp, students do not attempt to create a newspaper page. Instead they choose the "Photo Lab" option to place graphic images on an electronic easel, adding shading and, occasionally, a word or two, after which they print the result. Having mastered the program's mechanics at computer camp, they move up to the two-column, essay format when they return to school.

Print Shop by Brøderbund Software (highly recommended); editions include **Print Shop** (Apple II, Macintosh), **The New Print Shop** (Apple II, IBM), **Print Shop Deluxe** (Macintosh, IBM, Windows), and **Print Shop GS** (Apple IIGS).

What I like best about **Print Shop** is that it is so easy to use. This is also what I like least about **Print Shop**! The trick is to steer the younger children to **Print Shop** and older ones to programs with a heavier emphasis upon writing. In a room with 13 computers, the oldest is at a desk by itself with a monochrome monitor and a printer running **Print Shop** almost continually. Every bulletin board and every public domain supply house has **Print Shop** graphics to sell for $3 a side or less. Buy a couple. For optimum use, I recommend four rules:

- Rule One: Children may not touch the printer controls. **Print Shop** advances the paper before it begins to print, and the graphic fills the page exactly. If an adult does not set the printer, the perforated line on the paper is sure to run through the graphic.

• Rule Two: Work is not to be removed from the printer, except by the instructor. With **Print Shops** automatic advance, there must be a sheet of paper in the printer ahead of the one being printed. If children are allowed to remove their work as soon as it is printed, every printing wastes a sheet of paper. I ask them to delay getting their work until the next sheet being printed has moved forward. Camps with other printers may not need this rule, but it halves my paper consumption.

• Rule Three: Children may not make banners! It is a poor use of the child's time, and the computer's, to spend two minutes preparing what takes fifteen minutes to print. Young children don't know what to do with a banner, in any case, and they have an average lifespan of about 10 minutes. If you have a faster printer than I do and more paper, you may relax this rule.

• Rule Four: Whatever is printed must have words on it. If the children were creating their own graphics, I would not have this rule. Since they are choosing graphics from the **Print Shop** library, I want some evidence of creativity (words!) when they use the program. They often ask for help with the keyboard, and younger children are entitled to this. Some, not all, worry about spelling. Those that worry, I help.

Storybook Weaver: World of Adventure by MECC (recommended); Apple IIGS, Macintosh, IBM/compatible

Storybook Weaver: World of Make-Believe by MECC (recommended); Apple IIGS, Macintosh, IBM/compatible

I like **Storybook Weaver**, but children need help getting started. The objective is for the child to tell or retell an illustrated fable or fairy tale. After completing the title page, the child is asked if the next page will consist of text only or of an illustration with four lines of text underneath. If an illustration is chosen, the child begins by selecting a background and foreground from program memory. These are nicely melded on the screen. Backgrounds and foregrounds of solid color are also permitted. Next, the child selects objects -- people, animals, dwellings, vehicles, paraphernalia -- to place in front of the scenery and each other. Finally, the text is added at the bottom and the child may continue to another page. The program makes changes and editing reasonably simple. Eventually the story is printed, in color if the proper printer is available. The Apple IIGS program is copy-protected, so the backup copy must be ordered from MECC for $15. There is an inevitable shortage of illustrations, and I would have

liked to be able to use paint tools for editing, but I'm a lot older than the intended user. The documentation, aimed at teachers, is excellent, as one expects from MECC. I have one copy of each program, and they remain in use through most computer periods.

The Writing Center by the Learning Company (recommended); Macintosh

The Writing Center is the Macintosh version of **The Children's Writing and Publishing Center** (above). At a fifty percent increase in price, it provides a full-featured word processor for the older children.

ZipWriter, available from public domain suppliers (OK, but...); Apple II series.

ZipWriter, like **FrEdWriter** and **FreeWriter**, doesn't make much sense as a cheap alternative as long as **Apple Writer** is available for the same price.

Drawing

The children at my first two computer camps did a lot of drawing, but when they found they could print pictures without drawing them, using programs such as **Print Shop**, interest in drawing waned. If camp organizers wish to emphasize computer art, it is necessary to include the instruction in the tutorial portion of the program. Here are my responses to the programs that I have used. Again, the order is alphabetical.

BeagleDraw by Beagle Brothers (recommended with reservations); Apple IIGS

It took me several hours to become reasonably proficient with **Beagle-Draw**, not a long time for software with multiple features, but too long for young campers. One of the things I did with it was to create a gray scale, so that the children could print their creations with a black and white printer. Some, of course, prefer a brightly colored screen, even if they can't print it. Like **Platinum Paint**, which it resembles, **Beagle Draw** runs on the Apple IIGS computer, so the program is unavailable to campers using older computers. It is also, like **Platinum Paint**, too expensive for me to purchase more than one copy.

Brushstrokes by Softdisk Publishing; IBM-PC

Published with Issue 30 of *On Disk Monthly*, **Brushstrokes** offers a medium resolution, four-color graphics program for less than $15; however, I've never used it.

Deluxe Paint II by Electronic Arts (mildly recommended); Apple IIGS.

Like **BeagleDraw**, **MiniPaint**, and **Platinum Paint**, **Deluxe Paint II** provides the many features of a sophisticated drawing program, and in common with these other programs, is too difficult for young children to learn without assistance. **Deluxe Paint**'s capabilities are better than are implied by a coarsely outlined tool menu. The price is right if you can locate a copy of this discontinued program.

Electric Crayon: Dinosaurs Are Forever and **Holidays and Seasons** by Polarware (highly recommended for the youngest children); Apple II series; Commodore; IBM/compatible

Dinosaurs Are Forever is in continual use by my 7 and 8-year-olds. Little or no instruction is required to use this "computer coloring book." It may be argued that coloring is not drawing, and that these disks should not be classified under creative activity. That is certainly true when they are used, as they are, by older children, but there is creativity in choosing and mixing colors by children too young to use more sophisticated software.

The pictures that appear on the screen can be printed if you have the good fortune to have the right printer and interface card. The children will have no trouble printing, a one-step operation. Black and white pictures may be taken to the arts and crafts class for coloring with crayons, paint, or markers.

If you use these disks, make sure that the colors are erased from all the pictures and then write-protect the disks. If you do not do so, the pictures are saved with the colors in place, and loading of individual pictures is inconveniently long. Furthermore, the child can print someone else's work without any personal creativity. When the disks are write-protected, pictures do remain colored as the child moves from one picture to another and back again, provided no one turns off the computer.

The printing routines for some editions have additional capabilities, including the printing of banners; however, I do not use these features in my camps, because they waste paper and are time-consuming.

Children less than seven years old will have trouble controlling the cursor with a joystick, and I recommend that it be disabled, especially if a mouse is available. The other complaint I have with the **Electric Crayon** disks is their opening menu, which instructs the user to press the ESC key to make setup changes. As I have stated elsewhere, choices of this type should be reserved for teachers. Fortunately, a child who accesses the set-up menu will not be able to alter a write-protected disk, but they are often confused by the setup menu.

Electric Crayon: Holidays and Seasons by Polarware (recommended for the youngest children); Apple II series; Commodore; IBM/compatible

See the review of **Electric Crayon: Dinosaurs Are Forever** to find how the program works. My campers prefer the dinosaur disk.

Koalapainter and **Micro Illustrator** by Koala Technologies Corporation (recommended with reservations, if you can find either); Apple II, Commodore; probably others

Both **Koalapainter** and **Micro Illustrator** were distributed with the Koala Pad, a hand-held tablet that children wrote on with a stylus and saw corresponding lines on the computer screen. My Koala Pads were popular as long as they worked reliably, but they did not stand up to computer camp usage and began to draw lines of their own, effectively cancelling their value. The Koala software has long outlasted the pads and can be used with a joystick. I introduce children to the programs by having them draw intersecting frames or circles first and then fill the areas in the pattern that results. There are fifteen options on the drawing menu. The children like to draw freehand, but it takes a firm hand to get smooth freehand lines with a joystick. **Koalapainter** is the second edition of **Micro Illustrator** and includes a mirror mode, in which drawing on one side of the screen is reflected on the other. The children enjoy this, although they tend to go too long and produce a cluttered screen. There are two palettes, one with white, black, green, and violet, and the other with white, black, blue, and orange; however, if one draws with thick black lines, the resulting patterns can be filled with primary colors from either palette.

MiniPaint by JEM Software; Apple IIGS

See below. The rights to **MiniPaint** were acquired by Softdisk, and the program was upgraded.

MiniPaint by Softdisk (recommended); Apple IIGS

If they do not get lost in **Minipaint**'s extensive menu, which has many adult capabilities, most computer campers will be able to draw and fill with this program's bright palette. When shapes are drawn using the autofill option, only the interior of the shape is colored, but the black outline itself can be filled easily as a second step. **MiniPaint** was published on *Softdisk G-S* #49, which may be purchased as a back issue for under $20. Although **Minipaint** lacks the additional capabilities of **Platinum Paint**, its full-featured counterpart, children will not miss them.

MousePaint by Apple Corporation (recommended with reservations); Apple II series

Packed with the Apple Mouse II, perhaps with others, is a program called **MousePaint**. The operating manual is written for adults, but if children are taught how to blank the original screen to begin, then they can play with the mouse-driven menu. Only four primary colors (orange, blue, green, and purple) are available, and the oranges and blues must be separated from the greens and purples. A menu of gray-scale patterns is available for those wishing to print.

My Paint by Laureate Learning Systems, Inc. (highly recommended); Apple IIGS; IBM/compatibles

My Paint does not use the traditional menu bar, but the program was designed for children who are younger or have cognitive handicaps, and its custom menu is appropriate for these audiences. The animated paint icons have a lively appeal that compensates for any distraction. Children have ten colors, besides white and black, to choose for their lines, or they may draw patterns with a brush that changes color continuously. Mirror images are available, as is a speedy fill option. Another icon causes six of the colors to rotate from one shade to the next, giving each drawing a pulsating life. Included with **My Paint** is a portfolio of drawings to color, each having a distinctive sound when the child selects the "lips" icon from the menu. Originally$50 for **My Paint** and a coloring book of your choice from the **Talking Coloring Book** series described below, Laureate has dropped the price to $25, making this a "must-buy" package. Children may use the mouse or an Edmark **TouchWindow** to do their drawing.

PenPainter by Koala Technologies (recommended if you can find it); Apple II series

PenPainter uses a menu screen much like that with **Micro Illustrator**, no surprise since both programs come from the same publisher; however, **Pen-Painter** is tied to the Gibson light pen that most of you will find unavailable.

Platinum Paint by Beagle Brothers (the kid's mode is recommended with reservations); Apple IIGS

I can not afford more than one copy of **Platinum Paint**, and the Apple //e computers at my camp will not run it. The program is not self-instructing, even in the simpler mode recommended for use with children. The default settings permit the disk to be booted in the "Kid's Mode," and this is recommended. For a less expensive alternative, consider **MiniPaint**, which was written by the same programmer and includes the features children can enjoy.

As stated in the introduction, if you want children to use drawing programs, you must teach them. Unlike **Mousepaint** and **Micro Illustrator**, which are somewhat easier to use, **Platinum** Paint does provide a full palette of brilliant colors. There is also an animation mode, and an instructor who wants to do the work can provide a few seconds of entertainment.

SoftPaint by Softdisk publishing; Apple II, Macintosh

Originally published on Issue 26 of *Diskworld*, the Macintosh version was upgraded recently to **SoftPaint 1.1** in Issue 54 to include most of the features of a full-fledged drawing program. I have not seen this program, but *Diskworld* back issues cost less than $20, including shipping and handling, and Softdisk maintains high editorial standards. The Apple II version of **SoftPaint**, using a single high resolution screen, was published in Issue 130 of *Softdisk*. I've not seen it, either.

Talking Coloring Books by Laureate Learning Systems, Inc. (recommended); Apple IIGS, IBM/compatible

The **Talking Coloring Books** complement programs of the same names published by Laureate to teach early reading skills; however, the coloring books can be used independently with Laureate's **My Paint** (see above) even if the reading programs are not purchased. Besides the portfolio on the paint disk, there are four coloring books available: **First Words**, **First Words II**, **First Verbs**, and **Let's Go to the Circus**. With twenty pictures each, the first three disks illustrate common words like balloon or bush. If the child clicks on the written word or chooses the "lips" icon, the word is clearly enunciated by the

computer. The Circus disk features opposites, such as large and small, and sound is available for children who aren't reading yet.

Music

I make little use of music in my camps, in part because the computer rooms are so noisy. I have less expertise in this area.

Jam Session by Broderbond (recommended); Apple IIGS. The Macintosh version is by Bogas Productions.

Besides the fact that it would not run on older computers, my initial objection to Jam Session was the difficulty that children had in loading and running the program. Until 1998, I could not afford hard disks for all my computers, and Jam Session requires loading a system disk followed by choices within the finder that are not self-evident. There is also a glitch in the program that sometimes causes program windows to be off screen, so the program must be restarted. That summarizes the bad news. The good news is that the children not only liked the program, they liked it well enough to learn enough about the computer operating system to run it (a worthwhile achievement in itself). Consequently, I grew to like the program myself.

Jam Session is to music what coloring book programs are to art. The real work is done by the computer, but some creative activity is retained for the child. A child that proceeds beyond booting and running Jam Session can write musical riffs to accompany the music he or she selects and can "record" their creation. My children are content to use the keyboard to improvise.

It is impractical to use stereo equipment for a single program in a computer room, but, if you have a sound board, you may wish to provide headphones for use with Jam Session.

Logo PLUS by Terrapin, Inc (recommended for those with the appropriate background); Apple II. Other Logo programs frequently include music commands as well. This is certainly true of Atari Logo, LSCI LOGO II (Apple II, IBM), and the other Terrapin's Logo packages (Commodore, IBM, Macintosh).

Logo PLUS offers music commands such as TONE, TONES, TEMPO, PITCH, PLAY, and SING that allow children to write their own music; however, this requires considerable, individual instruction. The success of such a project has

been discussed earlier under Logo, and computer camp operators with a musical background should consider it. Apple's LOGO II, incidentally, has only one music command, TOOT, and is not recommended for music applications.

Music Construction Set by Electronic Arts (not recommended for children who cannot read music)

The **Music Construction Set** is an old program that runs on old computers. It is simply too difficult for my children. If you are musically talented, you can write music with the program for them to play back, but they will like **Jam Session** much better.

Metrognomes' Music by the Learning Company; IBM/compatible

So highly do I regard the Learning Company that I am recommending this program without having heard it. Aimed at children through the 2nd grade, it is not expensive and worth trying.

The Music Studio, v2.0 by Activision; Apple IIGS, Macintosh

I bought **The Music Studio** at a huge discount from the Big Red Computer Club, and I consider it a bargain. An adult will find the interface logical and easy to use, but not many children will. You hear the notes as they are placed on the staff, which is an attractive feature, but not enough to make this a kid-friendly program.

Songwriter by Learningways, Inc. (recommended); Apple II, Commodore

Thunder Mountain no longer publishes this disk, but the Big Red Computer Club has their stock, and while it lasts, **Songwriter** will set you back five dollars. The program has only one voice, so don't expect high fidelity, but kids with musical aptitude can peck out a tune and save it.

Treehouse by Brøderbund (not recommended for music); Apple II, IBM, Macintosh

The music tutorial on the **Treehouse** is the weakest section of the disk. The tunes aren't exciting, and it is much too easy for the child to get lost trying to figure out the musical quiz. The **Treehouse** needs a parent in the background. It's not successful at a computer camp where children work on their own.

Tunes by Microsparc (moderately recommended); Apple II

Tunes was published initially in *Nibble*, sold separately on disk with a couple other programs, and, eventually, turned over to the Big Red Computer Club for distribution. When loaded into memory, Tunes allows a novice to write programs that play simple, one-voice music. The simplest computer camp application would be a short program that turns the computer keys into a piano keyboard for the children to improvise on. If I can do it, so can you!

Apple Pascal (limited recommendation); other Pascal packages should work similarly.

For those who program in Pascal, the Apple Pascal package includes musical notes, and programming the computer keyboard to respond like a piano keyboard is straightforward. Those of you who have been to college know about textbooks that say that something is an exercise for the student rather than telling you to do it. I was a college professor!

EDUCATIONAL STUFF

It is not easy to classify educational software, and the educational value of a program depends on the child's age and grade level among other variables. Following their tutorial, my campers must choose an educational disk to use for the remainder of the first computer period. I have dozens of disks available, but those that follow have proven the most popular and effective. I have divided the programs that follow, sometimes arbitrarily, into academic categories.

Non-Verbal Programs for Young Kids

These programs are helpful with children who have never seen the computer before and are intimidated by the keyboard. Slow learners will also profit from their success with these.

Grandma's House by Spinnaker Software (highly recommended, but hard to find); Apple II series, Atari, Commodore

Grandma's House was written for preschoolers, but it is also popular with my young non-readers. The screen shows a house empty except for Grandma. The child uses a mouse or joystick to walk a character of his or her choice off the screen to a furniture store, an appliance store, a jungle, the beach, or another location where they choose anything from a monkey to a pool table to bring back

to Grandma. The children enjoy arranging furniture and appliances around the three floors of the house and learn something about the mouse or joystick and the computer in the process. Grandma's House is still available from Queue, Inc.

McGee, McGee at the Fun Fair, and Katie's Farm by Lawrence Productions, Inc. (mildly recommended); Apple IIGS, IBM, Macintosh

If I had younger children in my camp, these three programs would be entitled to separate reviews. Since the programs are too young even for my seven-year-olds, I'll discuss them together. McGee was a marvelous idea! A very young child wakes up before Mother does and wanders the house, doing the sort of things a very young child might be expected to do in the security of his home and back yard. Everyone I have ever shown this program has been captivated by it, and all my computer campers run it from time to time, even my 12 year old boys, who stand about the computer in a group, grinning and mimicing McGee's lisp: "Good morning, bunny wabbit." The program does take a while to load. Incidently, the publisher refers to McGee as "he," but the chubby child with bangs in pajamas might well be a girl, and the younger girls at computer camp call McGee "she."

Katie's Farm and McGee at the Fun Fair are less effective. In an effort to be inclusive, the publishers provided McGee with two friends, a girl and an Afro-American playmate, Tony. The introduction of a second child was a mistake. Children this young do not play together. They play side by side. In my view, the children who use these disks identify with one, but not both, of the children and, consequently, they identify with only half of the activities Worse, especially at the Fun Fair, the children aren't even active. They simply watch adults. If I were the publishers, next time I'd have one child again: Tony (or Katie) getting ready for bed (with a dozen distractions) while Dad or a baby sitter watches television.

The Playroom by Brøderbund (recommended, see **Multipurpose Software and Miscellany, below**)

Reader Rabbit by Brøderbund (highly recommended).

Reader Rabbit is properly listed under **Language Arts** and is described there; however, I often use the lowest level of Rabbit's classic game of concentration with my non-readers.

Toddler and Preschool Playroom, public domain games from *A2-Central*, August 1992; Apple II. Also available as **Early Games for Young Children** from Springboard; Apple II.

These "toddler games" may be typical of public domain software in their lack of sophistication, but they are easy to access and use. A mute autistic child attended my camp. At times this boy receiveed help from other campers or from an aide hired for the purpose, but he used this disk without assistance, and I am very glad to have it. The disk includes an introduction and some advice for parents.

Language Arts

Bagasaurus by The Electric Company (moderately recommended); Apple II

Beginning readers like **Bagasaurus**, and so do I. There are two games. The common response when I suggest any program is: "Does it use a joystick?" In the first game, **Bagasaurus** does. Children answer simple questions, moving Bagasaurus (a dinosaur with a shopping bag) to the correct answer. The graphics are adequate, but uninspired. A keyboard option is rarely chosen. The second game follows automatically featuring a story in which certain words are underlined. Arrow keys move the child from one underlined word to the next. If a child wishes, he or she may push RETURN, and an inappropriate response, sometimes a small picture, will replace the original word. The stories are not very interesting, and the substitute words and pictures are randomly chosen, so they may be incongruous, but they are not particularly amusing. The original word is always appropriate and the second never varies and is always wrong, so the child isn't being tested here. When my campers reach the second game, they turn off the computer.

Dell and New York Times Crossword Puzzles by ShareData, Inc. (not recommended); Apple II, Atari, Commodore

The price is right for these two ShareData crossword puzzle disks, but the definitions are beyond the ability of 7 to 12-year-olds, and you must read the documentation to use the software: all right for adults, but not for kids.

Fay's Word Rally by Didatech Software (recommended); Apple II, Commodore

Fay's Word Rally was created, not for home use, but for the classroom. The only software packages available are those intended for teachers; however, it

is not for that reason inappropriate for a computer camp setting where children choose their own games. The children enjoy piloting their small car from one word to the next, answering questions, and are only frustrated if they rush too hurriedly into the game and find themselves with a board that is too difficult or using the keyboard when they much prefer to use a joystick. The manual that accompanies the game is well written, and computer camp operators may well be tempted to create their own boards for camp use.

Just Grandma and Me by Brøderbund (recommended with reservations); CD-ROM

Anyone with reservations about **Just Grandma and Me** should keep out of the way of children and their parents, who won't agree. The program is attractive, has splendid graphics, and every page of this animated picture book is crammed with critters who leap into amusing action at the click of a mouse. It won't win a Pulitzer prize, but the story line holds up reasonably well amidst the plethora of cute sounds and visual effects, and any word or line chosen by the child is read clearly in English. I do not doubt that the Japanese and Spanish alternatives are equally crisp and understandable, but there is very little incentive for a child to listen to the story in any language, because the animations are so much more attractive. My conclusion: this disk is fun, but it won't teach reading. It belongs with McGee (which isn't bad company, at that).

Magic Spells by The Learning Company (recommended); Apple II

In the first years of my computer camps, **Magic Spells** was very popular among the brighter students. It has not fared so well with more imaginative, quicker loading software available as an alternative. It is still a good teaching program that students will work at once they learn how it is played.

It doesn't help that **Magic Spells** loads slowly and confronts the student with a long menu better seen by a teacher. If the student has the patience to get by these obstacles, he or she will be shown a list of words briefly and then challenged to spell them. There are two modes, chosen by the student. In the first mode the student is shown the letters of the word, but the letters are mixed, and the student must retype them in the proper order. In the second mode, the word is flashed on the screen for one to three seconds, after which it must be typed. Hints are available in both modes. Words that are missed on the first try are returned for review when the set is finished the first time. The lists of words vary from easy to challenging, and the camp director can prepare custom lists. One list the children like is one with all their names. Try it.

My House by Laureate Software (mildly recommended, if you can afford it); Apple II, IIGS, IBM, Macintosh. Also, **My School** and **My Town**.

Make no mistake about it. This disk and its companions, **My School** and **My Town**, were not written for computer camp use. The opening menus are strictly for use by an informed teacher, and the price tag is for someone paying with tax money, not personal checks. The programs are for toddlers or children with severe language disabilities. I will describe two of the options. A scene is shown with a large number of objects appropriate to the location. When the user clicks on an item, its name is given. There is a hesitancy to the speech, but graphics and words are perfectly clear. At another level, selected objects are blinked, and the child is asked, say, "What would you use to weigh yourself?" There are appropriate responses whether the correct answer, bathroom scales, or some incorrect object is chosen. The software comes highly recommended for its target population, and the Laureate personnel bend over backwards to help you.

Quentin's Neighborhood by Pelican Software (mildly recommended); Apple II

I was foolish enough to buy the 5.25-inch version that comes on both sides of four disks! Child after child has been attracted by the attractive labels and pulled **Quentin's Neighborhood** from the disk box, but few persisted long, defeated by too much disk swapping and difficulty figuring out how to use the software. I think **Quentin's Neighborhood** would do better if I bought the version on a single 3.5-inch disk and held a tutorial session first. Unfortunately, the story line is not interesting enough to overcome a strong academic emphasis.

Reader Rabbit (now **Reader Rabbit 1**) by The Learning Company (highly recommended); Apple II, IBM, Macintosh

This award winning program is deservedly well known and popular with beginning readers. I have two technical objections. First, the copy protection is picky, so disks die sooner than they should. The Learning Company does provide inexpensive back-ups. My second objection is even pickier. The Learning Company no longer makes a version of **Reader Rabbit** that runs on an Apple][+. Every computer camp with younger children should have two copies of **Reader Rabbit**. Those with newer computers will find newer versions. Both **Talking Reader Rabbit** (IBM, Macintosh) and **Reader Rabbit's Ready for Letters** (IBM) add sound, while **Reader Rabbit 2** (Macintosh) moves on from word recognition to early reading, and **Reader Rabbit 3** has just been announced.

Scrabble by Leisure Genius (mildly recommended); Apple II

It isn't impossible for older children to play the computer version of **Scrabble**, but they must get by a daunting list of questions at the beginning and avoid the serious mistake of allowing the computer to play. To solve the problem of getting the program started, I put a card in the disk envelope with answers to all the questions the program asks. Twice, the program offers to let the computer play, and my answer in both cases is an emphatic "No!" There are three good reasons for avoiding computer play: the computer beats young children too easily, it takes much too long for its moves, and the noise it makes consulting its memory is unacceptable. To add insult to injury, it uses the keyboard, rather than a mouse or joystick, to move about the board.

Scrabble Deluxe by Virgin Games; Macintosh, Windows

I've not tried this version of **Scrabble**, but I like the board game too much not to mention that it exists. At a minimum, you can get away from keyboard controls.

The Ugly Duckling by Byte Works (recommended); Apple IIGS

With some small variations, this is the classic tale by Hans Christian Andersen on two 3.5" disks. There are several options. Younger computer campers choose to have the story read to them as they look at the pictures. The graphics are clear, as is the sound, but the din of the computer room detracts from its usefulness. A camper can print the story and color the pictures, but that ties up the printer longer than I like.

Wheel of Fortune by ShareData, Inc. (recommended); Apple, Commodore, IBM, Macintosh, Windows

The popular TV show, **Wheel of Fortune**, is well represented by the inexpensive computer versions, and the program is one that eight year olds can play with success. Even those that cannot spell seem to find satisfaction in guessing the missing letters. I write the sequence "T N S H R D L" on the disk envelope as an aid to those who elect to use it. Young children do not do well playing against the computer. The children usually play in pairs, and I suggest they tell the computer there are three players, one of whom is named "Stupid." Stupid chooses letters such as Q or Z.

There are at least five editions of the game, of which the latest is **Wheel of Fortune with Vanna** (IBM, Macintosh only). As there are many different

phrases on each disk, repetition is not a problem. My only quarrel with the Apple program is with the graphic representation of the alphabet. Some of the letters are hard to read, and only one pixel distinguishes the N from the M.

Word Finder by Softdisk (recommended); Apple IIGS

As originally published on issue 52 of *Softdisk G-S*, **Word Finder** is tedious for children to access, and the word categories — classical music instruments and the civil war — are poor topics for kids. Fortunately, it isn't difficult to save the game on a disk by itself and to choose your own words. Try lists of the children's first or last names, for example. Incidentally, **Word Finder** is copyrighted, so the only copy you should be using is the one you make up for computer camp use. Set the original *Softdisk G-S* aside in case your copy becomes corrupted.

Writer Rabbit by the Learning Company (mildly recommended); Apple II, IBM

Writer Rabbit is another of those educational programs that are successful when there is an adult close at hand to explain, motivate, and reward. The program does not do any of these three very well. It is not the fault of the Learning Company that they wrote the program to supplement instruction rather than to provide it. If you have one child choosing from a box of disks, this isn't a helpful program. If you have eight children crowded around a computer with one disk and a teacher, this disk might do very well.

Puzzles — Logic and Better Board Games

Battle Chess by Interplay (recommended with reservations); Apple II, Atari, IBM

Of the 150 children attending my camp in a given summer, perhaps five play chess; however, I play, so there are always chess disks in the box of educational programs. Loading **Battle Chess** is a pain, because it needs information from the instruction book to begin as an alternative to copy protection. The graphics and sound effects are excellent, but children do not play long because their random moves are usually rejected as illegal. The joystick mode, which is entered by hitting the letter Z, is easily overlooked. If you use **Battle Chess**, buy self- adhesive labels at a book store and leave a note for the user: "Hit Z."

Board Games by Keypunch Software (recommended if you can find it); Apple II

The **Board Games** disk contains four games. One of these, **Connection Plus**, works well with two children. The other games aren't exciting.

Checkers by Computer Easy (not recommended); Apple II, Commodore, IBM

Even after the children find the display (by pushing ESC), they don't find the game easy to play. The checkers are located, properly, on the dark squares, but the squares are identified by numbers on the adjacent white squares. My kids have trouble with this, and few continue long enough to find out how well the computer plays. I'd use a checker game that is mouse or joystick controlled and lets a child win from time to time. I've not found that program.

Chess 7.0 by Odesta Corporation (recommended, if you can find it); Apple II, Atari

Chess 7.0 uses the left and right arrow keys for choices and the RETURN key for selection. This disappoints children who would like to use the joystick, but has the major advantage that only pieces that are able to move are highlighted, and after a child selects a piece, only legal moves are offered. At its fastest speed the computer is not very skilled, and will give a beginner a good, but not overwhelming game. The program is menu driven and has many options that most children can ignore.

Chessmaster 2000 by Software Country (not recommended); Apple II, Amiga, Atari, Commodore

Chessmaster 2000 is easy to load and run, but children must enter their moves in algebraic notation. The numbers and letters that surround the board make this easy enough, but it is a skill to be mastered. There is no menu, so the documentation must be consulted to make changes. The graphics are good, but the program plays too well for most children.

Chessmaster 2100 by The Software Toolworks (original versions are not recommended for children); Apple II and IIGS, Commodore, IBM

The original version of **Chessmaster 2100**, like the improved versions that followed, had many excellent features that adults appreciate more than children. The default settings cannot be altered, so it is not possible for the

program to begin in a kid mode. As a result, campers who cannot or do not change the initial settings are badly beaten. The graphics are good, although I prefer the two-dimensional board to the three-dimensional board that Chessmaster pioneered. The keyboard is accessed through a mouse or joystick, which is an advantage for chess-playing children and a disadvantage to those learning the game. The game cannot be played without information from the documentation. The Apple //e version does NOT include all the features printed on the box. For example, there is no clock, and the program does not assess playing strength.

Those who liked Chessmaster 2100 on older computers will love it in the updated version, such as the one for the Apple IIGS, although the program still does not include all the features advertised on the box. This version does permit default settings to be saved, so the program can be customized for computer camp use. The children will need to know how to play chess, and it is too easy to pick up the wrong piece when using the mouse or joystick. Those who use a chess clock will be disappointed that the clocks show elapsed time rather than time remaining, and the number of moves made is not shown unless you ask for it. The graphics are excellent.

Chessmaster 3000 by Software Toolworks; CD-ROM, IBM, Windows.

I haven't played Chessmaster 3000, but I'm looking forward to it. I don't expect it to be any better than the others for young children. Note (1997): I believe there is yet a newer version, which I have not seen, obviously.

Gertrude's Secrets by The Learning Company (recommended); Apple II, Commodore, IBM

Gertrude's Secrets are problems in logic well within the capability of very young children and well-programmed to make them succeed. After an introductory session showing how tokens may be picked up and moved, the child goes to one of three play areas. In the first, a three by three square is provided, within which Gertrude, a goose, places three tokens of differing colors and shapes. The child must place the remaining six tokens so that every row and every column has tokens of either the same color or the same shape. A token that is correctly placed remains in place, while a token on the wrong square falls back to the border. The child cannot fail to get the solution eventually, and Gertrude flies to him or her with a prize.

When the three by three matrix is mastered, the camper may move on to a four by four matrix or to two other games, one involving Venn diagrams

(classifications) and one involving sequences. These are also programmed to prevent the child from failing. This is a good game, but it has old graphics.

Gertrude's Puzzles by The Learning Company (mildly recommended, but hard to find); Apple II, Commodore

The format for Gertrude's Puzzles is the same as for Gertrude's Secrets with two significant differences. First, the problems are more difficult. Instead of creating rows in which all tokens are the same, for example, the camper must place tokens to make every one in that row or column different from every other. Doing so with a four by four matrix is challenging even to adults. The second difference is that there is no indication when a mistake is made. Only when the puzzle is entirely solved does the program respond to what the child has done.

Moptown Hotel by The Learning Company (not recommended); Apple II, Commodore, IBM

With all its successes, The Learning Company is entitled to an honorable failure, and Moptown Hotel fits that description. It is too cute for older kids and too hard for younger ones. Nice try!

Pipeline by Learning Technologies, Inc. (mildly recommended); Apple II, Commodore

I like Pipeline, which asks younger children to position sections of straight pipe, ells, and tees to deliver water from a source to various sinks such as boats and fountains. Unfortunately, my campers do not use the disk often. The graphics are not very sophisticated, but the children's problem seems to be, as usual, the lack of support for a joystick or mouse.

Pixel Puzzler by Softdisk (mildly recommended); Apple IIGS

The program takes a picture from its memory or entered by you and scrambles it into as many as sixty rectangular pieces, which must then be reassembled. Clicking on two rectangles in succession swaps the two. Those who weren't brought up strictly as I was may cheat by asking what the final picture looks like. Pixel Puzzler will draw some players if you use a scanner or art program to produce a picture of local interest or, say, cartoon character, and it is worth the back issue charge from Softdisk.

Plumb Crazy by Terry Burdett; shareware (recommended)

I received **Plumb Crazy** on *A2-Central* (March 1994), but it is available elsewhere. There is a small shareware fee. The game is similar to **Pipeline**, but the graphics are superior, there is excellent sound, and mouse controls are a great improvement over use of the keyboard. **Plumb Crazy** requires an Apple IIGS.

Rocky's Boots by The Learning Company (highly recommended, if you can find it); Apple II, Tandy

The Learning Company no longer produces **Rocky's Boots**, but buy it if you see it. Younger children will have fun moving, picking up objects, and setting the skeleton loose on the first board. By the time the top board is reached, even adults may have difficulty. Look out for the alligator!

Solitaire by Bill Tudor (recommended); Apple IIGS and ...

Sneak up behind a secretary in an office that isn't busy, and there may be a game like this under way on the Macintosh or IBM screen. Bill Tudor's version for the Apple, like those corporate time-wasters, plays easily, and older children will try it from time to time. The shareware price is $10. Those of you with a Mac or IBM machine already have this on your hard drive somewhere.

Stickybear Opposites by Weekly Reader Software (mildly recommended for younger children); Apple II, IBM, Macintosh

Stickybear Opposites is the only disk that I have used from the **Stickybear** series of programs. The graphics vary from routine to imaginative, and are less exciting now then when they were first published, but they get the job done. The sound is adequate. If a computer is equipped with voice capabilities, or includes a voice synthesizer such as the Echo or Cricket card, then the computer will talk to the child, greatly increasing its value. The **Opposites** program is handicapped without the voice card, since children young enough to be learning opposites are likely to be too young to read the words printed on the screen. My first **Stickybear** contact inclines me to want to see the others.

Think Quick by The Learning Company (highly recommended); Apple II, IBM

Think Quick is a logic game in which the icon of a small child moves through a maze with a series of gates to pick up tokens that can be assembled to obtain a map and a key. The map, in turn, shows where to insert the key to reach

the next board. Roaming the maze are slime worms, which will swallow an unwary child, who must then work his or her way out of the worm's belly. Knight School, the introductory board, does an excellent job of showing children how the game is played.

The icon that moves through the maze is selectable, boy or girl, and there is a seldom used utility which permits the creation of custom mazes. There is also a timer, which should be turned off by younger users.

Like much Learning Company software, the disk has fussy copy protection and will die after too short a period of use, so you are advised to make backup copies with Copy II Plus and use these copies rather than the originals. My use of the plural in that sentence does NOT mean you should make more than one copy from an original. That would be illegal. It means you should copy each of the two or three originals you will want to buy and use.

What's My Logic by Midwest Publications, now Critical Thinking Press & Software (recommended); Apple II, Macintosh, IBM

Once students get by a forbidding instruction screen and over not being allowed to use a joystick, they enjoy the challenge of What's My Logic. The screen displays a seven by seven array of tokens having different colors, shapes, and sizes. There is a rule that permits one to go from one shape to the next, but the rule changes with every board. For example, the rule might be that the size must change OR the shape must change, but not both, and color does not matter. If a child chooses correctly, the new token is highlighted, but a error causes the board to restart with the same pattern and rule. Seven-year-olds can solve boards one and two, but teens will have trouble with the last boards. This game is all right for one or two children working alone, but really comes into its own with an adult leader to challenge and question. The graphics are nothing to brag about.

Math

Decimals by Plato Educational Software, Control Data Corp. (mildly recommended, if you can find it); Apple II, Atari

In Decimals, balloons appear on a number line and the child types a decimal number into the computer. A dart crosses the screen at the designated value, and if it is close enough, the balloon bursts. The higher the skill level, the smaller the balloons. Higher levels also introduce negative numbers. It is too bad that the program is not generally available.

Five in a Row by Midwest Publications, now Critical Thinking Press and Software (not recommended); Apple II, IBM, Macintosh

In **Five in a Row**, to quote the help screen, "...you must add or subtract the two numbers you roll and multiply the sum or difference of the two numbers by a multiplier of your choice." Doing this allows you to place a token of your color on the corresponding number on the screen. The winner is the one who first gets five tokens in a row. I think a teacher could get children to use **Five in a Row** in a classroom where they have less exciting alternatives, but at computer camp my children do not get beyond that forbidding sentence. There are three versions of **Five in a Row: Multiplication, Addition/Subtraction,** and **Division.**

Fractions by Plato Educational Software, Control Data Corp. (mildly recommended, if you can find it); Apple, Atari

In **Fractions**, as in **Decimals**, balloons appear on a number line and the child types a fraction into the computer. A dart crosses the screen at the designated fraction, and if the fraction is nearly correct, the balloon bursts. The higher the level, the smaller the balloons. Higher levels also introduce negative numbers. The program was reasonably popular in its time, but its time has passed.

In the Neighborhood by Midwest Publications, now Critical Thinking Press & Software (not recommended); Apple II, IBM, Macintosh

My campers start **In the Neighborhood**, say "Oh, arithmetic!" and return the disk to the box. A fourth grade teacher might have better luck in the classroom. There are two versions: **Fundamental Operations** and **Elementary Algebraic Expressions**

Math Blaster and **Math Blaster Plus!** by Davidson & Associates, Inc. (mildly recommended); Apple II, IBM, Macintosh

Math Blaster was written to provide drill and some entertainment to students learning basic math facts. It does this well, and it is as entertaining as a mathematics drill is able to be. Students who are not turned off by math usually enjoy playing it for a while, but **Math Blaster** will never be a computer camp favorite. The children require some assistance getting it started.

Math Rabbit by The Learning Company (mildly recommended); Apple II, IBM, Macintosh

Not many children at computer camp try the first three games on the **Math Rabbit** disk more than once, but many return to play Game 4, the old game of Concentration with numbers or groups of tokens in place of playing cards. It is a good game for younger children to play with a friend. The autistic child who attends my camp plays the first counting game with the help of an adult aide.

Number Munchers by MECC (mildly recommended); Apple, IBM

No math program has ever reached the highly recommended stage at my camps, but **Number Munchers** does better than most. In a camp where math is to be stressed, this and **Math Blaster** are your best bet.

The Sesame Street Learning Library (mildly recommended) Apple II, Commodore, IBM

If the **Learning Library** used the joystick or mouse rather than the keyboard, I would recommend the program more strongly. My youngest children usually try this disk two or three times, but it doesn't hold their interest. The first programs involve counting or very simple arithmetic facts, and once the children get through the game once, they are content with their success and have no interest in drill.

Social Sciences

Maps! Maps! Maps! by Bruce Jones (mildly recommended); Apple IIGS, Macintosh

A collection of maps, rather than a structured game, **Maps! Maps! Maps!** provides dozens and dozens of maps to pore over. Kids who are fascinated by maps will find these fun, but most kids will be bored. The maps can be imported into paint programs, where they can be colored by young children.

Oregon Trail by MECC (recommended); Apple, IBM, Macintosh

This venerable program, one of the first educational best-sellers, goes on and on in ever newer and ever prettier incarnations. MECC is dropping its Apple II

line, and MECC copy protection tends to make disks unreadable after a while, but the Oregon Trail belongs at any computer camp.

Where in ... Is Carmen Sandiego by Brøderbund

In contrast to TV games such as **Wheel of Fortune**, Carmen Sandiego was a computer personality long before she appeared on television. The game has been praised deservedly and is so well known that a lengthy description is unnecessary. Carmen or one of her cronies steals a national treasure, and the player must track the villain down across the world and, more recently, time and outer space. Each game is accompanied by a reference book where the clues to each crime can be found if the child is willing to do a little work.

The first game, **Where in the World...** (highly recommended: Apple II and IIGS, CD-ROM, IBM, Macintosh), remains the best designed of the series. The graphics are not ambitious, but they amuse without detracting from the game. The *World Almanac* makes the perfect reference book, having an index just complete enough to make finding facts straightforward without making them too easy or too hard. Even so, I recommend having an atlas with a good index available for younger children. The CD-ROM edition of the game has splendid graphics, but requires 200 times as much computer memory. I'm not making this up!

Where in the U.S.A. ... (recommended: Apple II and IIGS, IBM, Macintosh) has the advantage of covering more familiar territory, but the *Fodor Guide* that accompanies the game is too difficult for children as young as mine. The food and music clues are too hard for them, also.

Where in Europe... (only mildly recommended: Apple II and IIGS, Commodore, IBM, Macintosh) has neither a familiar territory nor a well indexed reference, and it is the least popular of the disks at my camp. It introduces a limited computer database that children have trouble consulting.

Where in Time... (recommended: Apple II, IBM, Macintosh) has an excellent reference book, but the game's data base is a little complicated until the children get used to it.

Where in America's Past... (mildly recommended: Apple II, IBM, Macintosh) is a trifle too advanced for my children, but is recommended for its fresh look and familiar background. The reference book is indexed by date, rather than subject, making it awkward, but not too awkward, for easy use.

Where in Space... (IBM, Windows) was reviewed by John E. Mosley in the April 1994 issue of *Sky and Telescope*. Mosley recommended the program for elementary and middle school students, citing its sense of humor and graphics. Jay Pasachoff's *Peterson First Guide to Astronomy* is the "slim volume" provided to supplement the computer's database.

With 150 campers able to use the **Carmen Sandiego** disks each summer, I am kept busy deleting the names of previous campers to make room for new ones; however, if someone solves more than five cases, I do not erase the name, and some children are pleasantly surprised the following summer to find they are still on the detective agency's payroll.

USA GeoGraph by MECC (mildly recommended); Apple IIGS, Macintosh

For those captivated by maps and demographic data, MECC provides an abundant resource in **USA GeoGraph**, which features 30 maps and a database with 80 categories. If you buy the disk, challenge your campers to show you where they live. Sorry, it will cost you about $50.

World GeoGraph by MECC (mildly recommended); Apple IIGS, Macintosh

Major upheavals in the former U.S.S.R. and eastern Europe made many an atlas obsolescent, and MECC's **World GeoGraph** for the Apple IIGS was one of those affected. New editions are now available that include emerging countries like the Ukraine and Serbia, but the older edition can still be purchased, sometimes for less than $10, by those who don't object to 1990 geography. The coastlines are still the same, even if national boundries have moved. In addition to excellent well organized maps, **World GeoGraph** features a database with hundreds of useful facts about population, inport/export quantities, and other demographics. At the price, an excellent program — but not one many computer campers will try.

Science

Designasaurus by Britannica Software (mildly recommended); Apple, Amiga, Atari, Commodore, IBM

Designasaurus features two different disks, **Build-A-Dinosaur** and **Walk-A-Dinosaur. Build-A-Dinosaur** has a plausible idea, allowing children to create their own dinosaur skeletons by combining heads, bodies, and tails of different species and appending a name like "Whatasaurus!" The software offers to print the result, but most interface cards and printers are not supported.

Children who do not create a mixture are rewarded with a description of the dinosaur they choose. The problem seems to be that there is "nothing to do," especially with no printout to take home.

Walk-A-Dinosaur asks the child to choose one of three dinosaurs, which must then walk through several screens to reach its destination. The two herbivores must avoid carnivores while stopping occasionally to eat bushes or treetops, while the carnivore must catch herbivores. It is difficult to win with a herbivore, since the predators appear without warning much too close to avoid. It is difficult to lose, on the other hand, with the carnivore, since its meals appear under its nose. This program offers a printout that, again, does not work with many printers and interface cards.

Dinosaurs Are Forever by Polarware (see under **Drawing**, above); Apple II, Commodore, IBM

This excellent drawing program offers descriptions of the species, but the children who print them don't read them.

Odell Down Under by MECC (recommended, sight unseen); Macintosh or Windows

Eighty-two species try to survive with each other along Australia's Great Barrier Reef. Based on my experience with **Odell Lake**, below, I would expect this program to be popular and informative.

Odell Lake by MECC (recommended); Apple II series

Odell Lake in Oregon is inhabited by six different fish, who feed on algae, plankton, bugs, bottom critters, and each other. The lake may be visited by a hungry otter or osprey. Students learn about food chains by trying to survive as each of the six species. Instructors can decide whether to ask children to reach a competency level or to allow them to compete for high scores. MECC provides detailed lesson plans in the excellent documentation. The program has fussy copy protection, and both my 5.25" and 3.5" versions have died. The kids complain.

Typing

Computer Keyboarding 5 by Charles Hartley; shareware (recommended); Apple II series

This excellent typing tutorial by middle school teacher and administrator Charles Hartley is inexpensive and requires no apologies. It is available through

A2-Central and other sources of quality shareware and provides clear, self-paced instruction for older children who are serious about learning to type. It starts at square one with finger placements and stresses accuracy over speed.

Kids on Keys by Spinnaker Software (mildly recommended); Apple II, Commodore, IBM

Kids on Keys teaches the keyboard to younger children, but the graphics are unexciting, and campers lose interest. Try it with your seven or eight year olds.

Mavis Beacon Teaches Typing 2.0; mildly recommended (Apple II and IIGS, Macintosh, MS-DOS, Windows)

Mavis Beacon's is the most widely distributed typing program, is reasonably priced, and has much to recommend it. The graphics are professional, as is the entire educational package, but formal typing instruction is beyond my seven to twelve year olds.

Multipurpose Software and Miscellany

The Backyard by Brøderbund (recommended); Macintosh, CD-ROM

With the same point and click interface as **The Playroom** and **The Treehouse** (below), **The Backyard** was praised by critics who liked the earlier programs. The emphasis in **The Backyard** is upon science and social skills. I haven't seen the disk.

Family Feud by ShareData, Inc. (mildly recommended); Apple II, Commodore, IBM

I am not fond of the computer version of **Family Feud**, but my campers fight over the disks. There are two versions, and the second, **All New...**, edition, has a somewhat friendlier interface. The format is much like the television show. A question is asked to which there are many answers, and the child is to provide as many of these as possible in a limited time. The program does provide keyboard practice and imparts some general knowledge, but I have five reservations: there are too few questions on the disk leading to repetition; answers come from surveys rather than facts, and some are incorrect; the mild sexual innuendos on certain questions are objectionable; a number of the questions are already outdated; and the children are continuously asking me for

answers and for help typing. After all these objections, I'll say it again: "My campers fight over the two disks available to them."

Hollywood Squares by GameTek (not recommended); Apple II

Hollywood Squares imitates its TV namesake, but does not do well without TV personalities. Children who play the game only guess at answers.

Jeopardy by ShareData, Inc. (not recommended); Apple II, IBM, Macintosh, Windows

Another TV spinoff, **Jeopardy** is inexpensive, but demands better typing skills and spelling than my children can manage. If the computer is allowed to compete, it wins easily. The questions are too difficult for young children. There used to be a junior edition that was somewhat easier, but problems with typing and spelling are implicit in the game format. Editions include **First**, **Second**, **Sports**, and **Silver Jeopardy** (Apple, IBM) and the newest, **Jeopardy with Alex Trebek** (Macintosh, Windows).

The Playroom by Brøderbund (mildly recommended); Apple II, IBM, Macintosh

The Playroom is enjoyed by younger children. In fact, it is probably too young for most of my children, but it does them no harm to try the disk out before going on to something more challenging. Try to obtain the version on a 3.5-inch disk, since children young enough to enjoy **The Playroom** are frustrated by disk swapping. Skills taught include the alphabet (upper and lower case) and arithmetic with small numbers.

The Treehouse by Brøderbund (recommended with reservations); Apple II, IBM, Macintosh

When it is running with a 3.5-inch disk, the **Treehouse** has a variety of activities that will amuse a 7-year-old or challenge a 12-year-old. When running from a set of 5.25-inch disks, the program will exhaust the patience of an adult, much less a child. You will need the documentation to get started in any case. There is an uneven quality to the various subprograms. Drawing on the game's chalkboard is difficult to impossible, and the music routines require adult help. On the other hand, playing with the objects around the treehouse is automatic, requiring little thought at all. This disk is better for the home than for a computer camp, and an adult in the background is essential. The Apple II version has three less activities than the others.

Win, Lose, or Draw by Buena Vista Television, Inc. (mildly recommended); Apple II, Commodore, IBM

I found **Win, Lose, or Draw** in the discount bin at an office supply store. The box was inexpensive and included separate disks for Apple II, Commodore, and IBM/compatible systems. Based on the TV game show of the same name, the program allows up to three players to look at a computer drawn sketch and attempt to type in the word or phrase that it identifies. As with most such games, young children should not take on the computer. If less than three play, a dummy contestant (a good name is "Dummy"), can answer stupidly or not at all. The game is not difficult, but does not accept answers that are misspelled or slightly different from what is expected. It has a mild popularity among older campers.

THINKING WHILE HAVING FUN

I use a system in which the educational and creative disks listed above earn those who use them two to four points per session toward a prize at the end of the camp; however, I also allow the use of certain games that have reasonable educational value, even though they earn only a point or so for use. Most of these are disks of the "adventure" variety, involving reading, mapping, and puzzle solving, but I include a few others that are not true adventures, but incorporate significant thought into a game format. The order, again, is alphabetical.

Adventures

Adventureland (S.A.G.A. #1) by Thunder Mountain (recommended, if you can find it); Apple II, Atari, Commodore

Adventureland is a graphic adventure program with text input. The graphics are adequate, but unsophisticated. Children will be able to make reasonable progress in the time they have, but will not be able to solve the adventure. Up to four games can be saved, and I never have more than four playing simultaneously. Don't expect most subteens to draw a map, but they will use one if it is provided.

Age of Adventure by Electronic Arts (not recommended); Apple II

Age of Adventure provides two graphic adventure programs: Ali Baba and the Forty Thieves and The Return of Heracles. Although the games do not require much reading or typing, they require more patience than my campers possess and run contrary to their inclinations by operating more efficiently with the keyboard than with the joystick. Ali Baba is unusual in having periods when characters other than the one controlled by the camper are moving about and fighting. My kids are not interested in passive participation, and this confuses them. If you want your children to try the game, provide them with a map. There are two ways to proceed, one in which your character fights, but has more rooms to visit, and one in which he runs away, but can get to his destination more easily. Don't even consider not fighting!

Alice in Wonderland by HRM is reviewed under Language Arts, since it sticks closely to Carroll's book, although it uses an adventure format.

Alice in Wonderland by Windham Classics (highly recommended, if you can find it); Apple II, Commodore

Loosely based on the Lewis Carroll classics, **Alice in Wonderland** takes Alice first down the rabbit hole for half her adventures and then through a looking glass for the remainder. Computer campers can't finish this game in the time available, but they have fun exploring. Tell them they must have a parasol and candy before they enter the hole. This graphic adventure uses the joystick for movement and to call up a command menu. The graphics are not sophisticated, but they are more than adequate. The mix of riddles and joystick activity is good, and after most mistakes you may try again. I made maps, but the children weren't interested and got along without them.

Don't be discouraged if you are told "This is a defective disk" when you boot. Try again, perhaps with a different disk drive. Copy protection defeated my attempts to make a backup, and I was unable to replace my disk after it died, but it was the good disk, not the dead one, that gave me the "defective disk" message.

The Bard's Tale by Interplay (not recommended); Apple II; IBM

The Bard's Tale is an old game with many sequels and many fans, but it requires more patience and keyboard time than are available at our computer camp. Our young campers try for a while and then return the program to the box; however, I could see a teenager attacking the game week after week in an after-school format. Bookstores sell solution scenarios, and younger campers will sometimes attack a game like this with the solution book in hand. I haven't tried that.

Below the Root by Windham Classics (highly recommended, if you can find it); Apple II, Commodore, IBM

Like **Alice in Wonderland**, Windham's **Below the Root** has good, but unsophisticated graphics. The player may choose any of five characters, among them a young boy and a young girl, to be the "quester." A certain amount of care and dexterity is needed using the joystick to move the quester along tree limbs and up and down ladders, but movement is not really difficult. The quester can be kidnapped, but no one is killed, even when falling from a great height. Food and other necessities that cannot be found in the wilderness must be obtained as a gift. A quester who attempts to pick up something in another character's house is

told simply, "It was not offered to you." The program is well-suited to the older campers, and even the younger ones can explore the quester's world. After I played the game, I found and bought the books. I liked them, too.

Dark Castle by Silicon Beach Software (recommended as a game, not an adventure). Apple IIGS, Atari, Commodore

See the games section that follows for a review of Dark Castle. I mention it here because of its layout and the puzzles requiring solution; nevertheless, this is a joystick game from start to finish.

Demon's Forge by Mastertronic, Inc. (mildly recommended, if you can find it); Apple II

This graphic adventure with text input can be started, at least, by 11 or 12-year-olds. To make any progress they must "FOLLOW SKINNY MAN" when he appears. If they don't, I think they are out of luck before they begin. They can move around the first set of rooms without a map and find various objects, but they won't be able to proceed further.

Dragon Wars by Interplay (not recommended), Apple II...

Dragon Wars has attractive graphics for an older game, but it wasn't written to be solved in a short period of time by young children. It might be a good game to try in a group setting with a teenage leader, especially if the leader makes independent progress between daily sessions.

Dungeon Master by FTL Games / Software Heaven Inc. (recommended). Amiga, Apple IIGS, Commodore

This joystick-controlled graphic adventure was a big hit with my 11 and 12-year-olds for about a week. They weren't interested in maps or puzzles, and when the game became too difficult, they gave it up. The key here, as with many adventures, is to provide saved games at advanced levels for children to explore. There is no way to reach the end of this adventure in a week or two. This is one of those rare games that can be played by a group of children without an adult to supervise.

Eamon adventures, available from GEnie, CompuServe, America Online, and most public domain supply houses (recommended with reservations); Apple II

The Eamon series is alive, well, and easily available thanks in large part to the efforts of Tom Zuchowski and the Eamon Adventurer's Guild, discussed

earlier, which receives, reviews, supports, and catalogs the 200-odd text adventures of the **Eamon** universe. All games begin with disk #1, where players choose heroes, supervise the assigning of attributes like hardiness and agility, purchase weapons and armor, buy spells, and send heroes off to death or glory. The Adventure's Guild maintains lists of all games, together with their characteristics, and makes no bones about choosing the best and the worst. The highest rated public domain adventures are numbers 124, 114, 78, 194, 120, and 204. In 1989, Zuchowski recommended numbers 1, 10, 13, 15, 22, and 42 to me for a computer camp, based on their use by a Montana schoolteacher. This kind of personal service is typical of users groups generally and the Guild, particularly.

For a fuller description of how to use **Eamon**-type adventures at a computer camp, see the discussion of the **Sword Thrust** series below.

Forbidden Castle by Mindscape (mildly recommended, if you can find it); Apple II, IBM, Macintosh

This text adventure is more imaginatively conceived than the original **Eamons**, and uses a wider vocabulary; however, it is intended for repeated use by a persistant player. If you find a copy, you'll pay the commercial price, of course. All things considered, the **Eamon** series looks better for text adventures.

King's Quest by Sierra (highly recommended). Apple IIGS, Atari, CD-ROM, IBM, Macintosh

The **King's Quest** series utilizes excellent graphics with characters moving in a three dimensional universe controlled by the mouse, keyboard, or joystick. I prefer to use the mouse most of the time and the keyboard to go from one screen to the next. If you become impatient during screen changes and hit the joystick button too soon, your character will go back and forth, irritatingly, between screens. I have no other problems with program mechanics. From time to time you must type in commands. Although these are open-ended, most are sufficiently obvious not to frustrate the children. The best disks in the series provide many boards to explore before the character is killed or a riddle becomes too difficult. I find **King's Quest II** best for computer camp use, but our children play **King's Quest** I, II, III, and IV, which are all I have.

Legacy of the Ancients by Electronic Arts; Apple II, IBM

Like **Blacksilver**, which is reviewed below, **Legacy** is joystick controlled with a tiny image moving about a colored map. The commands (Fight, Open, Climb...) may be selected either by their initial letter or with the joystick. Internal to the game are three gambling games (blackjack, liar's dice, and

"flip-flop") and two arcade-type training arenas. None of these are directly accessible from a saved game, so a simple map will be needed to find them. As with **Blacksilver**, saved games corresponding to successive stages of the game are recommended, and the disk that holds them should be write-protected. The final sequence is fun, but it takes over an hour and is not recommended.

The Legend of Blacksilver by Epyx (mildly recommended); Apple II, Commodore, IBM

Blacksilver is on four sides of two disks. The game is joystick controlled with a tiny graphic image moving about a colored map peopled with towns, castles, dungeons, and monsters. Only specified commands are permitted (Fight, Open, Climb...), making the game easier for young children to play, but it is still involved, even if maps are provided. Since the game takes repeated sessions to complete, its use at computer camp depends upon having saved games and maps corresponding to successive stages of the game. Giving appropriate names to the hero (wilderness master, dungeon warrier, ...) lets children know what sort of adventure they will see when they boot up a saved game. The final episode of the game has arcade-type graphics and is quite popular. To prevent the loss of characters, write-protect the disk on which games are saved.

Lost Treasures of Infocom (mildly recommended); Apple II, CD-ROM

Zork is reviewed below, and it is only one of nineteen games included in this collection along with a stack of instructions and hint books. The **Lost Treasures** are a bargain, but the games do not include **Wishbringer**, the only Infocom adventure I can recommend for use at a computer camp. For you adults, "Enjoy!"

Questron II by Quest Software (not recommended if another graphic adventure is available); Amiga, Apple II, IBM

Like **Blacksilver** and **Legacy of the Ancients**, **Questron II** is joystick controlled with towns, castles, dungeons, and monsters. The game is shorter, on two sides rather than four, but is still far too long for computer campers to complete. The **Questron** graphics are inferior to those from the other two games, and there are fewer internal games to recommend. If you use **Questron**, provide saved games at successive levels on a copy-protected disk and adventure maps.

SeaStalker by Infocom (not recommended); Apple II, Atari

A text adventure with limited graphic assistance, **SeaStalker** was written with children in mind, but they must be children with Infocom experience, able to

think up and type appropriate commands into the computer. There are plenty of on-screen hints, but most children working on their own are intimidated by the open-ended command structure and give up quickly. This disk would do better in a structured setting with an adult suggesting alternatives to a group of children sitting around the screen.

The Seven Cities of Gold by Electronic Arts (mildly recommended); Apple II, Commodore, IBM

Like many other games in the adventure category, the **Seven Cities of Gold** will not be solved in the time available to a computer camper, but it is possible for a camper to complete his or her first voyage of discovery, given some instruction. Tiny graphic characters sail across the ocean to explore the New World, where it is important they establish friendly relations with native villagers. The children have a problem here, since the process of entering a village requires practice and patient, careful use of a well calibrated joystick. If they have the patience and coordination to pass this test, they will enjoy the game.

Space Quest by Sierra (mildly recommended). Amiga, Apple IIGS, Atari, IBM, Macintosh

The trouble with **Space Quest** I is that children make no progress before their character is killed. Originally my campers gave up, and before I could explore the game sufficiently to tell them how to get started, the disk died. Update (1997): when **Space Quest** became available for $10, I bought another copy and later acquired a second. One of my teenaged computer-room assistants worked at it for a while and saved at intervals with exciting titles. My kids still cannot solve it, but they boot it up to restore my aide's games and explore them. The aide has gone on to college, and the campers make little progress, but they are learning a lot about saving and restoring computer games. Others like **Space Quest** better than I do, and a series has been published.

Sword Thrust by Main Street Publishing (mildly recommended if you can find it); Apple II

Don Brown, creator of the **Eamon** series, was also the author of its commercial cousin, **Sword Thrust.** I was lucky enough to get five different **Sword Thrust** adventures when they were published, and they were still in use at my camp after ten years. I don't think you will be able to find copies, but the advice that follows should apply to **Eamons** as well.

At my second computer camp, I had two dozen children using a much

children to use one computer under the supervision of a teenaged assistant while the other sixteen used the remaining computers in groups of two or three. Naturally I rotated which eight were at the single computer.

Day after day the game used at the computer with eight children was **Sword Thrust**. The children drew their own map on a large piece of cardboard in the middle of the table and moved tokens from square to square to dramatize where they were going. Secret doors, monsters, and treasures were recorded on the cardboard. The children fussed about having to share a computer and swore they hated **Sword Thrust**, but we got through the summer.

The next year there were plenty of computers, and there was no need for a group of eight, but a funny thing happened. The kids who "hated **Sword Thrust**" the year before were asking for it to play on their own. My sixteen year old aide became a **Sword Thrust** expert, in constant demand for advice and information. Each year until they turned thirteen the veterans of the mandatory **Sword Thrust** group kept the game in constant demand and passed their interest in the game on to younger siblings.

MORAL: If you have a good game and teach it well, kids will play it day after day, summer after summer.

Temple of Apshai by Epyx (recommended if you can find it); Apple II, IBM, Macintosh

A graphic adventure game with miniature figures in a dungeon stocked with monsters and treasures, **Temple of Apshai** would be popular if it used the joystick rather than the keyboard. A map isn't necessary, since the hero has no trouble collecting treasures and returning with them (or being killed and resurrected). In either case, the hero is ready to start again. As computer camp operator, you can save on disk a superhero who will be tough to kill or provide a lesser champion. The campers prefer the super hero. It doesn't matter much; you'll never find the out of print disk.

Transylvania by Merit Software (Polarware); Amiga, Apple II and IIGS, IBM

The **Transylvania** series has reached its third adventure with a marked improvement in graphics, but still handicapped, from a child's standpoint, by open-ended commands. That is, the child must think of the command he or she inputs rather than selecting it from a prescribed list. The first adventure can be solved during a single computer camp, but it's unlikely that **Transylvania III** can. I have never seen **Transylvania II**, even in an advertisement.

You cannot solve **Transylvania I** without the use of material sent in the box with the disk. I threw these "unnecessary fillers" away, and for years no one at the camp could kill the vampire. One day, browsing in an used book store, I encountered some **Transylvania** hints, and, sure enough, there was the one clue we were missing. To the disk my children now use I have taped the words "Sing Some Enchanted Evening," and that has made the difference between a disk that is difficult and one that is impossible. It also demonstrates the frustrations that can arise in solving an open-ended adventure.

The Polarware people probably regarded the "Some Enchanted Evening" clue as a form of copy protection. I think it is poor programming. Tastes differ.

Transylvania III has good sound and much improved graphics. I have made some progress with it, but not much. Reading all the original material hasn't helped, either. I guess I should get a teenager to try.

Wishbringer by Infocom (recommended for group use); Apple II, Atari

Wishbringer is the only Infocom adventure that a young child has any hope of solving. Even so, they will need a map down the mountain from the magic shop. The game can be solved without help, other than light, from the magic stone, Wishbringer, but my campers haven't that much time or patience. Let them use the stone freely. This is another game that works far better with many children and an adult gathered around the screen, rather than with one or two kids working alone. Of the stuff that comes with the game, only the map needs to be passed on to the kids.

Zork by Infocom (not recommended); Apple II, Atari, CD-ROM (with other Infocom games), Commodore, IBM, Macintosh

The **Zork** series features text adventures with open-ended responses. You can't kill the series. Every time the it vanishes from public view, someone republishes it, usually cheaper than before (see **Lost Treasures of Infocom**, above). Teenagers attempt **Zork**, and some become addicted to it. In my view, the game is too difficult for computer campers, although they can wander around the upper levels for a while. If you like **Zork**, you will be pleased to find there are many sequels.

Mysteries

Police Quest by Sierra (mildly recommended); Amiga, Apple II and IIGS, Atari, IBM, Macintosh

My campers try Police Quest regularly and do not do too badly with it for a while, but they find great difficulty driving their vehicle, and the program has a small glitch when you restore a saved game. If you don't walk around a car before driving it, you'll usually end up with a flat tire. That's fine, and the documentation makes it clear this is part of the game. What isn't so good is that a player who walks around the car and then saves the game will find that the saved game doesn't record the walk around the car, and the walk has to be repeated after the game is restored.

Snooper Troops by Spinnaker (mildly recommended); Apple II

Another game too lengthy for computer camp, Snooper Troops does allow children to drive their car about town and visit the homes of suspects. If the game used a joystick rather than the keyboard, campers might get into the game's real objectives. As it is, they drive about for a while and then go on to another game.

Strategy Games — Deliberate

The Ancient Art of War by Broderbund (not recommended); Apple II

Broderbund has come up with an interesting and challenging game, but it can't be played intuitively, and my campers prefer a new game to reading instructions. Of eleven games on this disk, only the easiest, "The Contest of the Gods," is within the reach of my campers. I wish that Broderbund had given "The Contest..." a more exciting name and put in first on the list so I wouldn't be telling children, "Here's the book. I don't have time to tell you how it works."

Strategy Games — Fast

KaBlooie! by EGO Systems (recommended); Apple IIGS, IBM

The Apple version of KaBlooie! was distributed by *GS+*, Nov./Dec. 1993, with a warning that it is addictive. I can verify that. Kablooie displays one of three different mine fields ranging from ten squares by ten with ten hidden mines to 26 by 30 squares with 50 hidden mines. When a square is selected, one of

three things happens. If there is a mine at that location, the mine detonates and the player loses. If there is one or more nearby mines, then the number of mines adjacent to that square is shown. If there is no mine adjacent to the selected square, that square and all contiguous squares that have no adjacent mines are shown blank. The idea is to locate all the mines without being detonated. That's easier than not playing "one more time" after losing.

Tetris by Spectrum Holobyte (recommended); Apple II and IIGS, IBM

Although it has become a great success as a video game, Tetris began its existence as a computer game, and it is still one of the best on the market. As almost everyone is now aware, Tetris features geometric shapes falling from the top to the bottom of a narrow screen. As they fall, they can be rotated or moved left or right. The idea is to fill up a horizontal row, and each time this is done the row disappears. As the rows disappear, the falling shapes speed up. The visualization aspects of the game are what lead me to include it with the point-earning adventure games, rather than with the arcade games.

Adaptations of Board Games

Lords of Conquest by Eon Software (recommended); Apple II, Atari, Commodore, IBM

Based on Borderlands, a board game, Lords of Conquest is an excellent computer adaptation equally acceptable for competition between players or against the computer. The original setup takes rather longer than young children like, so I do that for them and save the game with the preliminaries out of the way. Some tutoring is required. The computer does an excellent job of playing its side if one opts for the "minimum chance" version, where it can calculate exactly. On the other hand, the computer is unwilling to take chances and plays much more poorly under the "high chance" option.

The disk comes with many maps, providing plenty of variety, but adults will find it fun to make their own. The data disk I keep in my game envelope has twenty-seven additional maps for kids to use, proof that map-making is as addictive as playing the game.

Mah-Jongg by Wedge Software, shareware. Apple IIGS

I obtained my copy of Mah-Jongg from the August, 1992, issue of *A2-Central*. It is probably available online as well. There is a standard layout of tiles, and the default option provides Chinese characters, which I recommend over

the other choices. The object is to remove identical tiles in pairs until all are removed. A tile can only be taken if it has no tile above it and it is free on either the left or the right. The graphics are excellent, although I had an irritating problem with reversal, the pieces occasionally appearing as holes rather than tiles.

Mastermind by GSF (mildly recommended). Apple IIGS

The price is right. **Mastermind** came to me on an Apple GS public domain disk from Christella Enterprise. **Mastermind** is available as a board game in novelty shops, and this is one of several transitions to a computer base. You are presented with a row of holes in which you insert pegs. The computer tells you how many of the pegs are the correct color and how many are both correctly colored and in the correct hole. You keep trying until you obtain the pattern chosen by the computer. You may change the number of pegs or the number of colors, but the four-color, four-peg version is sufficiently challenging for computer camps. Options are available to create your own games, but campers won't want to do this.

Milestones 2000 (recommended). Apple IIGS

Based upon the card game **Mille Bourne**, **Milestones 2000** provides excellent graphics and sound effects as you try to reach milestones before the computer by racing your car and blocking their opponent. All of this is done with cleverly designed, colorful playing cards drawn and discarded on the computer screen. I obtained the disk through *A2-Central*, April, 1991, but it is also advertised online and by public domain supply houses.

Pensate by Softdisk G-S, issue 51 (mildly recommended); Apple IIGS.

The mouse moves a **Pensate** token two steps (typically) at a time, forward, backward or sideways, across a checkerboard. After each move by the token, every other piece on the board moves once as well, and the player loses if the token lands on one of them, or vice versa. There are nine boards and nine levels. The higher the board, the more pieces to pass through. The higher the level, the more range and variety to the pieces, which aren't programmed to catch the token, but move in predetermined or random paths. High scores aren't recorded, and one cannot progress beyond level 9, board 9. There is also a cooperative two-player mode. The game is not exciting, but can be addictive.

Shanghai II by Activision (recommended); Apple II, IBM...

Shanghai is a prettier version of **Mah-Jongg** with nice graphics, attractive documentation, and sounds keyed to the each of several tile-sets. When I invited my computer room aide to take some disks home with him at the start of school for use on a borrowed computer, this is one of six he choose.

Shove-It GS by Peter Brinkley; freeware; Apple IIGS or **Simple Sokoban** I by Evan Day; shareware (Apple II, Macintosh)

According to Phil Shapiro of Balloon Software, crate-shoving is a popular puzzle form in Japan where it is known as **Sokoban**, and there is evidence that playing **Sokoban** enhances children's ability to solve problems. The idea is to push crates into place within a warehouse (maze), but if you don't think ahead a badly placed crate will block other crates and refuse to be moved itself. Younger kids aren't up to the challenge of **Sokoban** games, and there is too little entertainment value to keep the older ones interested for long. If your camp has teenagers, try it with them.

JUST FOR FUN

As my computer camps are organized, children play computer games only during the second of their periods in the computer room. Even so, more than half the campers prefer using educational disks to earn points or to enjoy their intellectual challenge. These two incentives, rewards and learning, also affect the choice and use of recreational software at a computer camp.

In a classroom setting teachers use game disks to reward children for work on other assignments. I don't happen to find this model helpful at my camps, but others may. I do allow children to use game disks daily, and it can be argued that I am rewarding attendance. Certainly I want them to go home remembering the fun they had.

In choosing computer games, I am influenced by price, availability, educational value, entertainment value, ease of use, and whether the program content is appropriate for my children.

At my first computer camp in 1985 I had very little money for software, so I put together disks with long menus of short games that I wrote myself or typed in from computer magazines such as *Nibble* and *Compute*. Similar programs are still available as freeware or bargain priced shareware from public domain supply houses.

I still use some of these simple games, but the price of 5.25-inch disks has fallen from $2.00 to $0.40, so now I place one game on each disk and children select from the game box rather than from a menu. I follow the same policy with 3.25" disks. If you operate a camp with IBM/compatible computers or other systems with hard disks, it would make sense to store freeware on the hard disks for instant access.

The list that follows contains a number of titles with the caution "...if you can find it." I have been quite successful finding these disks by logging on to the Genie A2 Roundtable (page 645;1), Category 4, and leaving a request on the bulletin board there. Shareware Solutions II should be contacted for discontinued software (the section of this book on program sources has further information).

Violent Conflict

This category includes games where children shoot or strike at intelligent targets. Some games, like **Death Sword** and **Castle Wolfenstein**, make it clear that shooting produces bodies. Others, like **Thexder** and **Viper Patrol**, are singularly bloodless.

Battle Zone by Russell Nielson; shareware (mildly recommended); Apple II

An unsophisticated arcade game, **Battle Zone** is easy to load and play. A jalopy drives down a road, jumping rocks and firing missiles at aircraft dropping bombs. There doesn't seem to be any penalty for simply holding down the fire button, so jumping rocks and changing speeds is the name of the game. Perhaps life is more difficult at the higher levels, which I didn't reach. The price is right.

Castle Wolfenstein by Muse (recommended with reservations); Apple II, Commodore

When it was published, **Castle Wolfenstein** was a nine days wonder due in part to the sound effects, guards who exclaimed "Kamerad" and "Achtung!" The graphics were exceptional for their time, too, although they seem primitive enough now. Long out of print, the classic game is still challenging and entertaining. There is little point in mapping the castle, since campers will inevitably choose new castles from the introductory screen, but kids will find their way around easily enough. The program takes forever to load, and there is a good chance you will trash the disk if you interrupt the process, so use Copy II Plus to make a backup. My reservation: one can only escape the castle by merciless execution of one hapless guard after another, each of whom collapses in a heap on the floor. It is only a game, but there are too many bodies for me.

The latest version of this game, **Wolfenstein 3-D**, is available on MS-DOS machines, and the first three levels are available for the Apple IIGS as a download from the online services. Someday the entire program should be available, but for now, three levels of gore should be enough for anyone.

Death Sword by Palace Software (recommended with reservations); Amiga, Apple II, Atari, Commodore, IBM

Death Sword is violent with spurting blood and decapitated corpses, which the kids appreciate more than I do. Loading is slowed by the need to calibrate the joystick. Children who can't or don't read the instructions (or

confuse left and right) will need help. The joystick use isn't intuitive: you press the button and then move and release the stick; however, the knack is soon learned. I use the disk I acquired in a job lot, but I won't replace it when it dies.

Dogfight II by Bill Basham; freeware (mildly recommended); Apple II

Dogfight provides instructions on the screen as it loads. The graphics are rudimentary, but adequate. Using the keyboard for input, you fly one plane and shoot at others. When any plane is hit there is a chance that the pilot will eject in a parachute. If the parachuting pilot -- you or the other guy -- can avoid being shot, he is revived in a new plane. I confess to disliking a game that asks kids to strafe parachutists. The game is all right, but old (1983).

GATO by Spectrum Holobyte, Inc. (highly recommended); Apple II, IBM, Macintosh

The Gato was a World War II submarine, and this computer simulation does an excellent job of keeping the instrument panel simple, the objectives clear, and the chase exciting. I am on my third GATO disk, and I am keeping my fingers crossed. Copy II Plus, Central Point's disk utility, has parameters for making backup copies of GATO, but I have never been successful doing so. The game has been out of print for some time, and people who own it don't sell it. Although computer campers may not get into higher levels, such as working at night and using radar to aim torpedos, they have a grand time chasing cargo ships and dodging destroyers. To speed up the initial stages of the game, encourage your kids to use the secret technique described on page 3 of the instruction manual for getting from one point to another instantaneously. They may be cheating, but they are also learning how to use a map coordinate system!

Karateka by Broderbund (recommended with reservations); Apple II, Atari, Commodore, IBM

I bought three copies of Karateka during the first two years of computer camp. I gave one of these away. The third and last died during the 1992 computer camp and I was clever enough not to have backups; however, kind misguided friends have given the camp two more. My seven and eight year olds used to fight over Karateka, hide it where others couldn't find it first, and play it endlessly. It is still a popular game with them. There were no instructions to read, hardly any puzzles to solve, and you could succeed simply by keeping the kick key pressed. What child could ask for more? It didn't matter that I found it

mindless, violent, without redeeming social value, and repetitious beyond belief. There, now... I warned you!

Plunder by Ken Franklin; reliefware (recommended); Apple IIGS.

The premise for **Plunder** is simple. You are in a room with up to three other persons (computer or human) and four shelves of packages. When it is your turn you may either open a package or leave the room. Most of the packages contain money or valuables, but one package contains a bomb. When you find treasure, as usually happens, everyone receives an equal share. Should you elect to leave, a small percentage of your share is withheld, but you keep the rest. If you are in the room when the bomb explodes, your share -- and everyone else's -- is lost, but you are revived for the next round of play. Some of the packages contain surprises that add to the fun. The winner is the first to accumulate a total fixed upon before the game begins. Children aren't good at figuring odds, but they enjoy the suspense. The graphics are good and the sounds are better than that.

Rescue on Fractalus! by Epyx (mildly recommended, if you can find it); Apple II series.

If the space simulation **Rescue on Fractalus!** is played as an arcade shoot 'em up, the player will lose, because rescuing pilots is the object, and needless fighting wastes fuel. Still, the kids prefer the upper levels, where there are plenty of attacking aliens. A teenager to whom I lent the disk lost my documentation, but I was able to reconstruct most of the commands. He visited me last weekend, and after ten years, I can now read the instrument panel. Children play **Rescue on Fractalus!** for a while and quit, because they lack the patience to fly by instruments, a requirement to win.

Sensei Karate by Quality Computers; mine was free with a hard disk purchase (mildly recommended); Apple IIGS

Sensei Karate features two fighters leaping, kicking, and chopping. Keyboard, joystick, and mouse controls are all possible, but none provides the right feel to me. The kids seem satisfied even when their characters are back to back, kicking thin air, and ignoring each other. The game takes too long to load and the instructions could be clearer.

Senseless Violence by Pangea (mildly recommended); Apple IIGS

Senseless Violence has an anti-smoking, anti-drug message, but it isn't a game I can get into, and despite a title that should attract young kids, they don't

use it either. Instead, try Pangea's premier product Xenocide, which is reviewed below.

Space Arrow by Tom Gooding; shareware (not recommended); Apple IIGS

Space Arrow is too involved for young kids. It would help if it were easier to see what is going on when the game starts. "No," say my campers; however, tthe game is inexpensive (free, if you don't keep it), so get a copy and decide for yourself.

Space Robots; public domain (mildly recommended); Apple II series.

There is no author's name on my copy of Space Robots. The game is keyboard operated and requires that the children read instructions. Most kids lose interest quickly. There are only text graphics, such as X's and O's, which don't help. On the other hand, it's free.

Spy Hunter GS by Shane Richards; freeware (recommended with a reservation); Apple IIGS

My reservation about Spy Hunter is its bloodless, but continuous, violence. The single purpose of the game is to drive a car destroying everything in its path with increasingly potent weapons. There is considerable variety in the types of cars you use and are confronted with, so the game isn't boring. It's noisy, too. The kids think it is great, and I have two copies in my game box.

Thexder by Sierra (recommended); Amiga, Apple II and IIGS, IBM

I don't suppose Thexder has redeeming social value, but the IIGS version is fast, noisy, and fun. I've not seen the others. Thexder is a flying robot that has invaded a mechanical universe, and is opposed by a plethora of flying gadgets, none of them humanoid, so the violence is downplayed. The player must act quickly, but there are puzzle aspects in recharging batteries and discovering routes from one level to the next. The Big Red Computer Club picked up distribution when Sierra discontinued their Apple II lines. Now that they are out of business, your best bet is an online service where used copies are sold. There are a lot out there.

Vigor by Russell Nielson; public domain (mildly recommended); Apple II series.

An early effort by Russell Nielson, **Vigor** is an unsophisticated shoot 'em up. Kids would like it better if it used the joystick instead of the keyboard. I may try to fix this, since **Vigor** is a short program in Applesoft Basic. My free copy came from *A2-Central*, but you can probably download it from any online service.

Viper Patrol and **Rod's Revenge** by Keypunch Software (mildly recommended, if you can find it); Apple II series.

I picked up my copy of these two programs on a disk in a remainders bin at an Apple hardware dealer's. **Viper Patrol** is an elementary arcade game with simple graphics. You fire endless bullets at swarms of enemy space ships while they fire back. Getting killed is no big deal, since you have many lives. In **Rod's Revenge** you move a space module through a matrix and fire at rolling marbles. The disk isn't used much.

Xenocide by Pangea Software (recommended); Apple IIGS

Although it takes too long to load, **Xenocide** is worth the wait. You should take time to use the joystick calibration before beginning. The first level consists of driving down a rock-strewn road dodging or shooting insects the size of horses who leave their innards and eyes plastered on your windshield when you cannot avoid them. It is singularly bloodless gore, perhaps because we are used to killing insects with our vehicles. The next level involves a rocket=powered robot, and I do not know what comes next, not having gotten that far. If you don't like it, the kids will. There's good sound, too, by the way.

Zapparoidz by Lane Roath and John Romero; freeware (recommended); Apple IIGS

A clone of the 80's classic, **Asteroids**, **Zapparoidz** provides a space ship travelling through an asteroid belt and encountering occasional unfriendly ships. I bought my copy from tca, a public domain source, and their catalog claims that **Zapparoidz** has graphics superior to those on **Asteroids**, but the mouse for the former is more difficult than the joystick for the latter.

Arcade Games

Bill Budge's Pinball Construction Set by Electronic Arts (mildly recommended, if you can find it); Apple II series. See Raster Blaster.

No camper of mine has ever been able to create a pinball game using Bill Budge's out of print classic. They go straight to the demonstrations on the disk to play the games. Since these demos are secondary to the disk's purpose, accessing them is not straightforward, and I write instructions for loading on the disk envelope. The program runs on some Apple computers, but will not respond to the joystick on others. I don't know why. All five demos have flaws: sooner or later the ball hangs up, but DEMO3 and DEMO5 will play quite a while without a problem. Pinball can be played by more than one player. Should you create a game with this program, you can save and run it on another disk, although I have been too lazy to do so. Several games created in this manner are available from public domain sources. Bill Budge's own game, Raster Blaster, recently released as freeware, is reviewed below.

Bouncin' Ferno II by FTA (Brett Dunst); shareware (mildly recommended); Apple IIGS

My children did not have the patience for this contest winning arcade game, which requires delicate control with the mouse. Perhaps yours will like it better than mine. Should you get hooked, there are dozens of boards to challenge you, and you can't beat the five-dollar price tag. My copy came from *A2-Central*, October 1992. The online systems have it also.

The Chase on Tom Sawyer's Island by Walt Disney (recommended with reluctance); Apple II, Commodore, IBM.

I don't like this disk, but the kids do. I guess that's reason enough to buy it. My objections: The Chase... plagiarizes Pac-Man without adding anything of merit, takes forever to load (the youngest children can't load it without help), will not run on older computers, and doesn't play well. The introductory graphics are mindless and run interminably. There is a screenful of instructions too long for most young children containing the essential words "...press K for keyboard or J for joystick to start immediately." If you miss that phrase the whole boresome process is repeated. My opinion: neither Walt Disney nor Mark Twain would like this program.

Creature Feature by Russell Nielson; shareware (recommended); Apple II

Creature Feature is an arcade game in which you are trying to protect strange looking beasts at the bottom of the screen from falling wiggly creatures and other pests. If you fail, the beast at the bottom screams "OUCH," and you have lost a turn. From time to time a bouncing ball emits smaller balls that immobilize you if you cannot duck them. The game loads without difficulty and the play is self-explanatory. The price is five dollars.

Crystal Quest, Ltd. by Quality Computer; freeware (recommended with a reservation); Apple IIGS

Your spaceship moves about the screen picking up crystals and lobbing fireballs at the occasional bad guy. The mouse control takes some getting used to, as does aiming and firing. The kids like the sound they get when they exit the board, but you may agree with Ellen Goodman and me that it is inappropriate. There are excellent graphics.

Dark Castle by Silicon Beach Software (recommended); Apple IIGS

Although **Dark Castle** is formally an adventure, the arcade emphasis is so strong I keep my copy in the game box. There are a succession of boards, and you have many lives in which to climb ropes, run up and down stairs, explore rooms, and fight evil critters and bad guys. The game takes more coordination than most of my children possess, but few will admit it. They like **Dark Castle**, and so do I.

Digger by Microsparc (mildly recommended, if you can find it); Apple II

Digger was the most popular item on the game menu at my 1985 computer camp and it is still a good game on an Apple IIGS It is too slow on an unaccelerated Apple][+ or //e, although it runs on both. I typed one copy in from *Nibble* and then ordered another. Digger, as the name implies, digs through sand in search of energy sources while avoiding poisonous roots and bad guys. There's no speed involved: the computer doesn't move until you do, so you can plot your movements. The game uses the keyboard, rather the joystick, which is a disincentive to the children. If you have any programming skills, you can change that. The program is in Applesoft Basic and not copy protected.

LemminGS by Brutal Deluxe; Apple IIGS (recommended). There are also MS-DOS and Macintosh versions (highly recommended)

Stated simply, **Lemmings** is the best computer game created this decade, and even the Apple IIGS version, which is too slow on an unaccelerated computer, is great! You will thank me for telling you to play this yourself and accumulate passwords for the first thirty levels or so. I have passwords for levels 1-73 on a laminated sheet, and if you can't do it, you know a teenager who can. The kids can solve the lower levels easily and will enjoy trying upper levels using your passwords. If you are a purist who wouldn't dream of giving all those passwords away, give just two or three. Heck, here's one for nothing: OHLFOCEDFT. Enjoy!

Little Brick Out by Apple Computer (mildly recommended); Apple II series.

I include **Little Brick Out** for sentimental reasons. The game was included with my original Apple II system disk, and I became so good that I could cover the right hand side of the monitor screen with a book and still knock out all the bricks with the first ball. I'm older now and no longer give handicaps to computer games, but I have **Little Brick Out** on a disk by itself in the computer box. I provide a startup screen with instructions to the child to turn the joystick so the cord faces left, so up and down joystick motion will have the same effect as the discontinued Apple game paddle. Sometimes I see a child trying it out, and I am pleased for old time's sake. They don't play long.

Lode Runner by FH; freeware (recommended); Apple IIGS

This classic Apple II game has been moved to the Apple IIGS and is welcome in its new incarnation. With bad guys in pursuit, you move up and down ropes and ladders, run across bars and platforms, and dig holes in quest of gold. If you get all the gold, you are entitled to climb to a new board and worse problems. My copy of **Lode Runner** came from Cristella Enterprise. **Lode Runner** is written in **Pascal**, so I can't save it on my hard disk or boot it from the finder, but those aren't handicaps at a computer camp.

One Armed Battle by Ken Franklin; reliefware (mildly recommended); Apple IIGS

It's hard to find fault with Ken Franklin's graphics or sound clips, and the money he collects from his programs goes to aid the homeless, so look into **One Armed Battle**. Featured is a six-window slot machine, and your task is to accumulate points faster than your opponents (human or computer) by deciding

when to end your turn, pocket your winnings, and turn the machine over to the next player. It is also helpful to be lucky. Kids aren't too sharp at figuring payoffs, or they would like this game as much as I do.

Pac-Man by Thunder Mountain (recommended, if you can find it); Apple II

Pac-Man began as an arcade game and was well established when the computer versions became available. Most of the children know how to play without instruction. The way the defaults are set, a child who keeps hitting the Return key will end up in the keyboard, rather than the joystick mode, so a little training is needed in that regard. The arcade version uses a digital joystick. Moving the stick left, for example, clicks a switch that says: "Go left." An Apple or IBM machine has an analog joystick. The further the joystick is moved to the left, the more a resistance is changed. When the resistance changes sufficiently, the computer "goes left." As a result, joystick controls are a little sluggish or, if not well calibrated, downright stubborn, leading to a lack of feel that hampers operation. Another problem occurs when the program is booted on an Apple IIGS. If one does not enter the control panel and select the "Alternate display mode," the instructions and setup questions aren't printed. To log on, one must know the sequence of keystrokes used on older Apples and use these. I don't try to teach this to kids, although I write in on the PacMan envelope. Instead, I lean over their shoulder and type: 2, Space, 1 (for one player), Return. Younger kids keep my three copies in use. Check with Shareware Solutions II if you want one. They picked up a lot of old Atari games when the Big Red Computer Club went out of the Apple II business.

Qix by Taito (recommended, if you can find it); Amiga, Apple II, Commodore, IBM

Qix is another program that requires children to read screens and respond to introductory instructions such as: "Move the joystick to the upper left and press a button." Not all of them can do this without assistance. The game is not self-explanatory, but it is learned easier than it can be explained. You are presented with a rectangle that has a dot on one side. Moving the joystick right and left or up and down will cause the dot to slide in the corresponding direction along the edge of the rectangle. In the center area floats Qix, a spiked, moving creature. At any instant you may press a joystick button and turn so the dot cuts across the rectangle, trailing a line behind it. Should Qix touch it or the trailing line, you've lost a turn. Should you make it, the area on the other side of the line from Qix is filled in, and you score points. Filling most of the rectangle promotes you to the next board. Older kids like this better than younger ones.

Raster Blaster by Bill Budge; freeware (recommended); Apple II series.

The GEnie Apple Roundtable is to be congratulated for persuading Bill Budge to release this game into the freeware category and for sponsoring a contest to remove the game's copy protection. One of the best pinball simulations, **Raster Blaster** is fun, addictive, and free from glitches. The game runs on all Apple II computers, although the introductory screen on the Apple][+ is gibberish. It doesn't matter. The play's the thing!

Solarian by Stick Software and by Coloureeze (recommended); Apple IIGS, Macintosh

Originally developed for the Macintosh, **Solarian** was rewritten for the Apple IIGS as **SolarianGS**. I have only played the latter, which is shareware, costing only $10, which is sent to a public school in California. The game is very challenging on my modified Apple //e, since I do not have a keypad and cannot raise my shield, ordinarily done with the zero key on the keypad. Even so, I've enjoyed the game and am becoming moderately proficient at using the mouse to zap icons zipping about the screen. The documentation tells you how to create a self-booting disk, but I haven't been able to do so on an Apple IIGS **System 6.0.1** disk. On the other hand, I had no difficulty running the program either from my hard disk or from a floppy disk once **System 6.0.1** is in place.

Super Boulderdash by Electronic Arts (very highly recommended, if you can find it); Apple II, Atari, Commodore, IBM

Thinking ahead, but moving quickly, is the prescription for success with **Super Boulderdash**. Getting started is tricky, since the choices are **J** for joyport or **A** for Apple joystick, and too many campers hit the **J**. A joyport, in case you are interested, is an Atari joystick. Once the **A** or **J** hurdle is passed, the game is straightforward. Your character, who looks like an extraterrestrial from a planet evolved from frogs, is named Rockford, and he digs through sand and avoids falling rocks to collect diamonds. There are butterflies and fireflies that explode on contact as well as an expanding amoeba. There are sixteen regular boards and four bonus boards, each having up to five levels of difficulty. If you beat boards A through P (or just want variety), turn the disk over to play **Super Boulderdash II**, which places a somewhat lower emphasis on strategy, but a greater stress on agility. My three copies are in constant use.

Tilt by Softdisk G-S, issue 47 (mildly recommended); Apple IIGS

Tilt isn't wildly exciting, but there are a succession of increasingly difficult boards to work up interest. Kids can certainly master the first few, although the mouse control takes getting used to. The screen shows a maze, through which you roll a ball by moving the mouse to "tilt the screen." The graphics are excellent.

The Tinies by Brutal Deluxe (highly recommended); Apple IIGS

Another new game by these French programmers, free to IIGS users, is The Tinies, fuzzy balls as cute as Star Trek tribbles who just happen to threaten the earth with destruction. The game uses the keyboard; otherwise, it is an unqualified success for a computer camp. The trick is to pick up the Tinies and place them in their beds, where they will sleep away their dreams of conquest. Getting them into their beds is a mixture of skill and thought. The graphics and sound are great, especially the splendid crash when you lose control and a Tiny hits a wall.

Sports

Earl Weaver Baseball by Mirage Graphics (mildly recommended, if you can find it); Apple II

Earl Weaver Baseball takes too long to load for my impatient youngsters, tempts them to try a complicated version that is over their heads, and is too involved even in the simpler, arcade version. The disk is not copy-protected, but you cannot play without the manual. Those who appreciate a baseball game with bells and whistles will like this one. The graphics are adequate.

Fast Break by Accolade (mildly recommended); Amiga, Apple IIGS, Commodore, Macintosh

It was my original intention not to recommend Fast Break. In several short attempts in the past, I was unable to get the game up and running; however, I persevered recently, and I now believe I can show older children how to get started on the game, if they have some patience. Fast Break is not intended for young kids. Its audience is older basketball fans who want to analyse the weaknesses of an opposing team to take advantage of them. As a game for would-be coaches, rather than would-be players, it seems to do well. Unfortunately, my camps contain few embryo coaches. Fast Break does have a stunning title screen!

Golf's Best by 1 Step Software, Inc. (recommended, if you can find it); Apple II, Commodore

I buy discount software when I can, and 1 Step provided good value for the money while the company lasted. **Golf's Best** is not copy protected, so there is no reason to use the original disk. Probably that is why I still have the game after several years. Getting **Golf's Best** started is an ordeal. The child must answer about two dozen questions, questions that children cannot answer, such as: "Does your computer have an Apple Color Card?" The game itself has enhancements, such as allowing for wind direction, that I suggest the children skip. I write basic instructions for choosing and using the correct club on the disk envelope. My principal complaint with the game is that once one reaches the green, it is difficult to line up a putt if the ball is close to the hole. Ten-foot putts are easier than one-foot putts!

HardBall by Accolade (recommended); Apple II, Atari, Commodore, IBM

Hardball is my first choice as a baseball computer game, and my camps use three copies., two for the Apple IIGS, and one for the Apple //e or //c. Pitching and batting, if not self-evident, are easily learned, and getting started is not a problem if children control their impulse to hit the **Return** key every time the screen changes.

F1 Race by Joel Quejada; shareware (recommended with reservation); Apple IIGS

While you will not go bankrupt paying the shareware fee for **F1 Race**, it is a little high for a comparatively simple program. The screen is divided. You dodge cars on a racetrack to the left while glancing occasionally at your instrument panel on the right. You must get fuel from time to time by running into gas pumps on the race track. The graphics are better than adequate, but there is no feeling of speed as you drive, because all you see are other moving racers. You don't even zip by the gas pumps, which move almost as fast as the cars. There's no bonus for passing someone, since you are competing against the clock, and you brake by pushing the **Command (open-Apple)** key, which takes a little practice. Since **F1 Race** is shareware, try it. If you don't like it, don't pay the fee, and discard the game.

One-on-One by Electronic Arts (highly recommended for old computers); Apple II, Atari, Commodore, IBM

I saw my first copy of **One-on-One** in 1985, and it is now some years since its reincarnation as a video game. I was a hero the day I brought the disk into this

basketball loving neighborhood, and the game remains a camp favorite. Larry Bird takes on Dr J., and the camper can be either player. If I could redesign the game, I would change the default settings to eliminate the two-joystick option, but changing defaults is one of the first skills my children acquire. In fact, they like the two-joystick setting, since it sends their opponent to a remote corner of the screen so they can score goal after goal under an undefended basket. Little or no instruction is required. Copy protection prevents the game from loading on the Apple IIGS.

Quadronome by Pangea; freeware (recommended for a try); Apple IIGS

Here's a game for racquetball players. On the left side of the screen you seem to be looking down a long room, and there is a ball coming toward you. Moving the mouse or joystick positions a square racquet in front of the ball just as it reaches you, and it bounces back to the far wall again. Keep it up if you can! The image on the right side of the screen shows the same court from the opposite end and can be used by a second player if you don't want to play the computer. Setting up and strating is easy, but the game is difficult. Try it, since it's free.

Shuffle Mouse by Tom Gooding; shareware (mildly recommended); Apple IIGS

Shuffle Mouse is a shuffleboard simulation. There is a knack to sliding the pucks with the right force, but a corresponding knack is required in actual shuffleboard, so this is an observation rather than a complaint. The computer does not play. There is a fault in the programming: the same color (player) always goes first, giving an advantage to the second. Children cannot compensate for this oversight by changing color every game, because the game to game scores are accumulated. I liked the simulation, and kids may not realise that playing first is a handicap.

Skate or Die by Electronic Arts (arghhh!); Apple IIGS, Commodore

I hate Skate or Die, but that may be irrelevant. It is very hard on joysticks, which must be manhandled to provide good results. The game will keep aggressive kids quiet for a while.

Summer Games II by Epyx (mildly recommended); Amiga, Apple II, Atari, Commodore

The first release, Summer Games, was well received when it was published, but I never owned a copy. Summer Games II doesn't get much use at

camp. The instructions are a bit abstruse, and I don't teach in a culture that exposes children to sculling or the triple jump. When things are slow, I boot the disk and play it until some kids say: "Can we try?" but their enthusiasm wanes while I am still explaining what to do. I've just received, but have not examined, Winter Games, the third disk in the series.

Top Fuel Eliminator by Activision (recommended, if you can find it); Apple II, Commodore

Kids like fast cars, and Top Fuel Eliminator gets booted frequently, even though the game is too difficult to win. The idea is to read track conditions and then vary parameters such as tire pressure to obtain an ideal performance from a drag racer. The race itself requires a perfect start, a well timed shift of gears, and a steady hand on the joystick to keep the car centered on a straight, but narrow track. Kids do reasonably well with the mechanics, but lose out in choosing car characteristics, so they rarely win a heat and never a championship. The game is well thought out with clear instructions, but it needs an "easy mode" for youngsters.

I was in the general store when the notice came over the fire department squawker, an auto accident just past the Dairy Bar and an ambulance on the way. One of the men standing there hurried out. The accident was near his house. An old car went around the corner, siren wailing, one of the CPR team. Within a minute it was followed by the rescue squad truck and the pumper from the Volunteer Fire Department.

The squawker again: "Send the doctor." No identification was needed. The tiny community has only one doctor. We are very glad he's here. "He's on the way."

A truck pulled into the store with news: a dark blue or black pickup had had a collision. The driver was a boy, hurt, yes, and being treated. A van arrived, with a name this time, not a full name, just what people called him.

The school principal came in. "Can I use your phone." The call: "Are you… I'm the school principal and also a member of the fire department. Your son's been in an accident… Yes, he's hurt. No, I don't know how bad. Can you come?" He left.

I'd heard the full name this time, and the penny dropped. I remembered a freckle-faced little boy from sixteen years before, and later, a teenager who lived at the bottom of the hill, where I had to honk as I went by to please the fourteen year old girl who helped me as a junior counselor.

I drove home past the line of vehicles and blinking red lights, one lane closed and two volunteers moving traffic. Ten minutes later the ambulance and a police car went by my trailer, sirens wailing, an hour getting there over bad roads. When, a moment later, the ambulance returned, heading for the hospital, its lights were on, but there was no police car and no siren: good news (or very bad).

SOFTWARE FOR THE GROWNUPS

The educational disks and games used at a computer camp have already been discussed in some detail. It is time to consider software used for camp operation, as opposed to software used by the children.

When computer literacy was discussed, there was an extended description of how I teach computer nomenclature and other topics. I wrote **Camp Master** to assist me in this process, and you may find it helpful, too. When I was using Apple][+ and //e computers with 5.25" drives, I made forty or more copies, so that each child could have a disk with his or her name on it, and the few children who had a computer at home could take the disk with them at camp's end. The programs on **Camp Master** are described in detail in an appendix. Most of the programs are for the children, but some, like joystick calibration, will get more use from adults. When I acquired a sufficient number of Apple IIGS machines, I rewrote **CampMaster** as a HyperCard stack for a 3.5" disk, which I no longer give to each student.

Full featured utilities and word processors will not be needed on every computer at the camp, but the camp operator will need both.

The premier disk utility program for computers using Apple DOS 3.3 or PRODOS 8 (i.e. Apple][+, //c, //c+, or //e) is **Copy II Plus**. This utility is also packed with Laser 128 computers, which emulate the Apple //c. At this writing **Copy II Plus** is available from many suppliers, although it is no longer in print. Since **Copy II Plus** was not designed for use with Apple GS/OS, it should not be used with programs specific to the Apple IIGS. The **Finder** utility included with the Apple IIGS's latest system disk, currently **System 6.0.1**, will perform many disk and file functions, but camp operators are urged to buy either **Prosel 16** or **Salvation Supreme**.

A word processor is essential. Individual programs have been reviewed for use by the children, but the camp operator can handle, and will need, more features than the campers can appreciate. **AppleWorks** continues to be the staple in the Apple II world, although **Bank Street Writer Plus** is less expensive, very easy to learn, and has the minimum features a camp will need. A one-time standard, **WordPerfect** is still recommended for IBM/compatible or Macintosh computers and it was once available for the IIGS. You may prefer MicroSoft **Word** for the former, and **ClarisWorks** is another alternative. Many like **Lotus 1-2-3**.

Database software is not necessary to run a computer camp, but I find that AppleWorks provides a convenient, easy way to store essential information about my more than 600 computer campers, past, present, and future, as well as my equipment inventory, and I prefer it to AppleWorks GS, although the latter could do the job. ClarisWorks provides for the Macintosh an adequate database similar to the one offered with AppleWorks GS. I have not used any other Macintosh or IBM database systems, so you must get further advice elsewhere. It is almost certain that your major sponsor will have a database on their computer with a staff person who can instruct you in its use. Learn to do it yourself. It isn't hard.

Beginning next year I will have a hard drive on every computer, so I was pleased to find SlixSecurity, a $10-shareware program that allows me to restrict access on the hard drive to a single folder unless the user has a certain password. That will keep the little kids from doing all kinds of mischief to files on the hard drive without denying them its advantages. If you like the idea, download the program from your local online service and try it. Send the $10 fee to programmer Bret Victor, 19253 Parkview Road, Castro Valley, CA 94546.

The corresponding program for more expensive computers is At Ease, which I haven't used and cannot review for you.

WHAT ABOUT THE INTERNET?

Well, what about the Internet? With everyone from the President of the United States down to the average high school student believing that Internet access is the most important function that computers can offer education, who am I to argue? Furthermore, everyone in the communications business seems intent on offering that access to everyone for a base charge of, typically, $19.95 monthly.

I am unable to tell you what software package you should use with Macintosh or MS-DOS/Windows machines, because I would be out of date and wrong by the time you received and read my advice. It is easier with an Apple IIGS. You should spend $75.00 to buy Spectrum from Seven Hills Software, 2310 Oxford Road, Tallahassee, FL 32304-3930; 1-904-575-0566 or 575-2015 (FAX). That will give you a first class program for using a modem. Now add $25.00 to the same order to add the Spectrum Internet Suite (SIS), which will allow you to surf to your heart's content. You can buy an equally good, though different, communications program, ProTerm 3.1, from another software manufacturer, Intrec, 3035 E. Topaz Circle, Phoenix, AZ 85028-4423; 1-602-992-1345 or 992-0232 (FAX), and use Lynx to do your surfing. Neither SIS nor Lynx will

show you web graphics, but SIS gives the better feel for what the Web pages look like, while Lynx makes downloading easier. I prefer Spectrum and SIS for the Internet and ProTerm 3.1 for everything else that I do online.

Since SIS has been on the market less than three months at this writing, I have not attempted to use it at my camps, and I am not convinced in any case that children in the seven to twelve year old age range are ready for the reading and typing that surfing requires. On the other hand, I wouldn't consider a camp for high school students without Web access.

Probably I will set up a single Web station at my camp next year and see who uses it.

A number of years ago I was in the boys' dormitory on the campus of my primary sponsor when a half dozen 14 or 15-year-olds returned in an angry mood. They had been wading in the creek when some older boys from town had dropped pebbles on them from a bridge. The dorm had returned to "arm itself" and left swinging pop bottles and a length of chain. I was only a visitor, but the situation didn't look healthy, so I followed after a minute or two and found the last of the town boys climbing into an old car in front of the church.

"Did you see some kids from the cottage?" I asked, and the older boy pointed to the church, pulled shut the car door, and drove off. I went inside and saw no one, but exploring a little, I found the door to the bell tower open, and when I went inside, the bell rope was swaying. I called a couple times, and after a little bit the trap door at the top of the tower opened, and one of the dorm kids looked down at me.

"Are they gone?" he asked. I nodded, and the six came down the ladder, looked cautiously through the door, and then swaggered out. I guess I looked amused, but the boys weren't slow to recover their dignity.

"They weren't so tough," said one. "If they wanted trouble, they knew where to find us!"

LEARNING THE EQUIPMENT

Computers

All but one of my camps have used computers from the Apple II series. The principal advantage of the Apple II is that they are available. There are a great many of them gathering dust in closets and on school shelves during the summer. The Apple //e and IIGS are still common computers in elementary schools, so educational software continues to be available, and there are thousands of files in the public domain. The machine is also easy to use and repair. The disadvantages are those of an obsolescent machine. Many skilled programmers have moved on to other computers, and those hardware and software dealers who depend upon the mass market are not producing new products for the Apple II. Since the Apple II is competition for the Macintosh, Apple Computer discontinued the Apple IIGS shortly after it was released and suspended sales of the Apple //e in the Fall of 1993; however, they continue to manufacture an Apple II coprocessor that can be used in a Macintosh to run Apple //e software. Coprocessors to run IIGS programs were in the beta stage during the summer of 1997.

Handicapped at one time by a small, monochromatic screen, the Macintosh was unattractive to schoolchildren despite the great advantages of its user friendly interface. With Macintosh prices plummeting, color screens a common feature, and coprocessors available to run Apple II software, the Macintosh is making inroads into the school market, especially since Apple has withdrawn the Apple II as a viable alternative. Although color Macintosh are too new to be generally available for camp use, more of them will come into the used marketplace with the onset of PowerPC models. The Macintosh is also easier to adapt for network use than the Apple II machines. In fact, Apple II networks require a Macintosh server.

Computer camp children dislike keyboards, and the full-featured IBM keyboard is a minor obstacle at computer camps. Although PC and XT models and their clones are becoming available as gifts or loans to schools, these machines will not run programs requiring more than 612K RAM or sizable hard disks. Those programs that use Windows, even older versions of Windows, are more expensive and less available as loans. To reach the larger market, a great many educational programs for IBM/compatible computers were produced that did not use the newer machines' advanced features.

APPLE II SERIES

Apple][

The original Apple][computer is too old for use in a computer camp, but it may have some antique value.

Apple][+

The Apple][+ was sold with 48K in RAM memory. There are a few, very old programs available for a 48K-Apple, but not many are recommended for computer camp use. New or used memory cards with an additional 16K may be purchased from a number of dealers (see section on PERIPHERALS). There are educational programs that run on an Apple][+ with 64K, but the number of good programs is limited. An exception is the original **Print Shop**, and until 1997, I dedicated one Apple][+ to running this program at every computer camp. You can buy a used Apple][+ without peripherals for yardsale prices.

Apple //e

The former educational standard computer, Apple //e's are still in everyday use in the public schools, especially at the elementary level. Software continues to be developed for the //e model, but it has neither the memory, the graphic capability, nor the speed for the newer exciting programs of the 90's. The Apple //e can be, and ought to be, expanded to 128K to take advantage of the many 128K programs on the market, since new or used 64K expansion cards are not that expensive.

Enhanced Apple //e

The enhanced model has an improved microprocessor over the original Apple //e, provides better graphics, and can use a 3.5-inch disk drive. Kits to convert from the original to the enhanced version cost about $60. A case can be made that Apple //e programs used in a computer camp do not often use 3.5-inch disks, so the money might better be spent on additional software. In any case, a prudent camp operator who does not have an Apple IIGS on hand will see that there is at least one enhanced model available to be used for camp administration: word processing, data management, and duplication of files and programs. The

so-called "platinum" Apple //e's manufactured in recent years are all enhanced and may be identified not only by their "platinum" color, but also by a numerical keypad to the right of the standard keyboard.

When elementary school children attend a computer camp located in a public school and plan to use their school's computers, there is still a reasonable probability that those computers will be Apple //e's. If computers are unavailable at the school, used models are frequently available from the want ads. An enhanced //e system that includes a monitor, two disk drives, and a host of other peripherals, manuals, and software ougth to be available for about $200. New, enhanced //e cpu's (computer without monitor, drives, or other peripherals) cost only $99.

Apple //c

A much smaller, portable, closed-system model, the Apple //c builds in many of the capabilities that must be purchased and added to open system machines like the Apple //e. For example, attaching a printer to an Apple //e requires the purchase of a parallel or serial interface card that fits into a slot under the computer cover. Such cards cost approximately $50. The printer interface is built into the Apple //c. One simply plugs the printer into the back of the machine. On the other hand, if you have a blind child who needs a computer that will talk, you can slide the necessary card into a slot of the open Apple //e, but will be unable to add such a capability to the //c. The disk drive is built into the //c. One inserts the disk into a slot in the side of the case. A used Apple //c should cost less than $150. Warning: the "doors" to the built in drives frequently need repair.

Laser 128

One reason that more Apple //c's were not sold was the introduction of the Laser 128 computer into the Apple market. Designed to compete directly with the Apple //c, the Laser 128 was the same size, had the same built in disk drive and peripheral ports, ran faster, and was cheaper. The Laser 128 was still available in October of 1993 when this book was originally written. I have not looked recently. The price from USA Micro, 2888 Bluff street, Suite 257, Boulder CO 80301 (1-800-654-5426) was $279. The Laser 128EX, which is three times faster and permits the addition of up to 1 MB in memory, was $350. Occasionally an Apple program will not run on the Laser machines, but this happens rarely. There has been at least one of these models in most of my computer camps. Most peripherals that work with the Apple //c will work with

the Laser machines as well. There is also the Laser 128EX/2, which has a built in 3.5-inch drive as an option and a MIDI (music) interface. I've never seen one, and I don't think you'll see one either.

Apple //c+

In an effort to regain the market share lost to the Laser 128, the Apple//c+ was designed with the speed that the Apple //c lacked. In other respects the machines were similar, and the //c+ had the respected Apple name, reputation, and assured compatibility for new software. Unfortunately, Apple also decided to standardize the Apple //c+ around a 3.5-inch drive rather than a 5.25-inch drive. Whatever the advantages of the smaller drives, the Apple-using public had boxes full of 5.25-inch disks, and too many of the //c+'s that were purchased ended up gathering dust. Should you be offered one, take it, because the children will appreciate the speed, but plan to attach an external 5.25-inch drive.

Apple ///

In an early attempt to crack the business market, Apple manufactured the Apple ///. This computer is generally incompatible with Apple // disks, virtually no software suitable for children was made for them, and they are useless at a computer camp. If you are offered one, decline politely.

Apple IIGS

Apple produced an excellent computer in the Apple IIGS, one that ran all of the older Apple][+ and //e programs, had excellent graphic and audio capabilities, and was faster as well. Unfortunately, the IIGS was in a position to compete with the Apple Macintosh in the business market, and Apple saw no reason to compete with itself. Consequently, the Apple IIGS was left to languish and was rarely advertised, although Apple did continue to update its hardware and operating system. When the last of these systems, with a Macintosh like interface, did not cause a rush of Apple II owners into the Macintosh marketplace, Apple pulled the plug on the Apple IIGS and ended their sales of the machine.

Because Apple did not choose to market the IIGS, they are less generally available for loan, but you may acquire one when a disgruntled Apple owner decides to move from an Apple base to an MS-DOS (IBM/compatible) machine. With luck you can get a lot of software as well. The Apple IIGS is an excellent addition to a camp. It will run all but the oldest software (I have display problems with One-on-One and Pac Man, for example), it has excellent speed, and it has

its own nice looking, neat sounding software. With about $400 you can buy a used system with all the peripherals you will need including 4 MB of memory.

Apple //e Emulation Card

The last I heard, Apple Computer, Inc. continues to manufacture and sell the Apple //e emulation card, which is fitted into a slot within the Macintosh LC computer by a dealer, allowing Apple II software to be executed on Macintosh systems. Costing under $200 in 1993, the emulation card writes to the Macintosh color monitor. Since the pixels on the Apple II and Macintosh screens have different aspect ratios, Apple II images appear shorter and wider on Macintosh monitors. For most software, this is a matter of aesthetics, rather than content. Apple promises a high level of compatibility, and almost all //e programs run without a problem.

The emulation card has connectors for daisy chained Apple II disk drives and a joystick. One uses Apple II software by placing the disk in the Apple II drive and using the Macintosh mouse to click on an Apple //e icon on the finder screen. Thereafter, the computer acts as a virtual Apple //e. The Apple //e mode also permits a programmer to write Apple II programs in Applesoft Basic.

The emulation card operates faster than a standard Apple //e, but slower than an accelerated Apple II system. Speed is not usually a problem with educational software. The usual 128K RAM configuration is provided for Apple //e programs, and additional RAM can be accessed by programs like AppleWorks. System peripherals, such as a printer or modem, act as if they were in their usual slots on an Apple //e.

I have not used the emulation card, and most of the information provided here was published by *A2-Central* in their July, 1991 issue.

Franklin

The Laser 128 paid Apple the royalty necessary to manufacture their computer without claims of infringement. The early Franklin computer was an Apple clone without Apple authorization and eventually Franklin lost an expensive lawsuit to Apple. Later Franklin models that had Apple approval were never successful. If someone offers you a Franklin, take it and try it, but I don't advise buying one. There were too many problems with incompatibility.

Apple IIGS Emulation

As of the summer of 1997, two IIGS emulation programs are under development with public demonstrations and an active program of open beta-testing. **Bernie][the Rescue** is a product of Bright Software, a Swiss company with a St. Bernard logo, while GUS is being worked on by Apple engineers, although it is not an Apple product. The emulators run on the Macintosh Power Macs. At the present writing, most Apple II and IIGS software will load and run if not copy-protected.

IBM SYSTEMS AND THEIR CLONES

Since the beginning, IBM personal computers have been cursed and blessed by clones or compatibles from other manufacturers, computers that emulate the IBM machine, but cost substantially less. The curse, from IBM's standpoint, is that the clones cut into IBM sales. The blessing was that their existence made IBM models the personal computer standards of the industry. Although early clones had compatibility problems and would not run all the software designed for IBM systems, such problems are now much rarer. The discussion that follows does not mention clones specifically. Mark Minasi, in the second edition of his excellent manual *The Complete PC Upgrade & Maintenance Guide*, classifies IBM and Compaq as the manufacturers who define software compatibility. It is their systems for which the software is written. The "second tier" in Minasi's opinion are AST, ALR, Dell, Gateway 2000, Zenith, AT&T, Unisys, and Wyse. Before discarding other manufacturers, be guided by Minasi's final words on page 621 regarding the "third tier:"

> The absolute best part about these machines is that they are the simplest to upgrade and maintain. They also have the best price/performance in the group, and compatibility is usually as good as in second tier machines.

Better yet, buy and read Minasi's book!

IBM PC

At the time that the Apple II, Commodore 64, and Radio Shack TRS-80, among others, were carving out their niches, IBM remained aloof, preferring to dominate the mainframe market. As it became clear that the public preferred

individual computers to terminals sharing time on mainframes, IBM challenged the entrepreneurs with its own computer, even having the chutzpah to claim PC as a trade name. The new machine with the three magic blue letters was an instant success, and the tide shifted toward the accustomed leader. The original PC was well-designed, had the familiar IBM keyboard as well as the not so familiar open architecture that made the Apple][series a success. Unlike the Apple, all of the software, including the Basic compiler, had to be purchased and loaded separately, adding to the already considerable cost of the computer. Released with 64K RAM in 1981, the PC was upgraded to 256K in 1983 and to 640K in 1986. The models with 640K will run much modern educational software, although the 4.77 MHz microprocessor will be slow in some applications.

IBM PC Jr.

Computer companies sometimes permit their marketing team to make design decisions, and the PC Jr. was a victim of IBM's concern that an inexpensive, portable computer would cut into sales of the desk model PC. The portable model was crippled by a tiny keyboard, among other defects, and sold poorly. Accept one as a gift, since it will run much of the educational software, but don't buy one

IBM XT and Clones

The XT-model had the same 4.77 MHz microprocessor as the IBM PC, but added a small hard drive (IBM uses older industry terminology and calls it a "fixed" drive), an important feature for camp operators, since it virtually assures that a used machine will arrive with an operating system and assorted software (much of it illegal) in place. You can expect the XT to have 512 to 640K in memory and to run most educational programs, albeit slowly.

IBM PS/2 Model 25 and Model 30

The PS/2 Model 25 and Model 30, unlike later PS/2 models, use an 8086 microprocessor that operates at 8 MHz, a 67 percent increase in speed over the 8088 chip in the PC and XT. Unlike the rest of the PS/2 series, these two models use the same 8-bit ISA "bus" as the PC and XT to transfer data from the microprocessor to and from peripheral cards and memory. As a result, they are slower than the PS/2 50 and later models. There should not be a problem with educational software if expanded or extended memory is not required.

IBM AT

With the first AT models, IBM introduced the 80286 microprocessor, commonly abbreviated "the 286." Although its processing speed of 6 to 8 MHz was not much greater than that of the 8088, it had an ISA 16-bit bus, permitting twice the data to be moved simultaneously leading to a near doubling of computer speed. The AT also introduced "extended memory," additional RAM that could be addressed, but only by software programmed to use it. As it happens, most MS-DOS programs do not access extended memory. Extended memory is different from expanded memory, which is available for all IBM models; however, expanded memory is also unavailable unless programs are written for it. Games make much more used of extended and expanded memory than do educational programs. When acquiring software, read the labels carefully if more than 640K of RAM is required.

386 Machines

Used IBM/clone computers using the 80386 microprocessor are commonly called **386**'s. The IBM models were the standards, but so many clones were produced that it is no longer appropriate to use **IBM 386** as a generic title. The advent of MicroSoft's **Windows**, and the extent to which **Windows** has become the dominant operating system of the computing world, makes it important that the **386** will run **Windows 3.1**, the oldest version with reasonable reliability. Since there is no longer much point in teaching 12-year-olds, let alone 7-year-olds, the MS-DOS operating system, the **386** is the oldest model that can be used with most school software.

486 Machines

As the name implies, the **486** uses the 80486 microprocessor. They are significantly faster than the **386** and that much harder to borrow or scrounge; however, the advent of the **486** is what is responsible for all the **386**'s being available for computer camps. This is the most recent computer that you are apt to borrow for a computer camp, and it will run whatever educational software you acquire.

MACINTOSH MODELS

The Macintosh, unlike the IBM PC, has few clones, but Apple Computer has made up for this absence by producing a bewildering assortment of Macintosh models. The PowerPC is too new and too expensive to appear in many computer camps, unless your school district is more fortunate than most. The PowerBook line is aimed at commuting adults and is only beginningto put in an appearance at high schools. Only the more expensive models have color monitors.

The easiest Macintoshes to acquire are the older models with small, built in, black and white monitors. Children will not go to them when color monitors are available, and System 7 is required for much educational software. Many programs will run on machines with as little as 512K RAM, although 1 MB is desirable. As a rule of thumb, you will need a Mac Plus or later system. Few color programs will run without 1 MB or more. Excepting the requirement for a hard disk, the following quote from an educational supply house is typical.

> Macintosh System Requirements: Macintosh Plus or later; hard disk; System 6.0.7 or later. For System 6.0.x, 1 MB for monochrome and 2 MB for color. For System 7.0 or later, 2 MB for monochrome and 4 MB for color... (system requirements for KidDesk, "1994 Educational Print and Software Catalog," Edmark, Redmond WA)

Many education programs require **HyperCard**, which, despite its name, is the Apple programming "environment" for the **HyperTalk** computer language. **HyperCard** is software, not an electronic card. A comparable program, with somewhat different features, is Roger Wagner's **HyperStudio**. Both are highly recommended, even for elementary school students.

Additional Memory. You can add additional memory to Macintosh models, although it is harder to get inside the cases of the classic models. Additional memory usually comes in the form of Single In-line Memory Modules (SIMMs), which often must be installed in pairs or in fours.

Some Prices

The list of models, but not data, is reasonably complete. Prices change from day to day, with condition, and with what is packaged with the system. I have left blanks to get the book printed. Consult your dealer!

Model	RAM Maximum	RAM Typical	Typical Hard Drive	Typical Price
Mac Plus	4 Meg	1 Meg	800 K	$175
Mac SE	4 Meg	4 Meg	40 Meg	$300
Mac SE/30	4 Meg	4 Meg	40 Meg	$550
Mac II	32 Meg			
Mac IIx	32 Meg			
Mac IIci	16 Meg	5 Meg	80 Meg	$600
Mac IIcx	16 Meg			
Mac IIfx	36 Meg			
Mac IIsi	17 Meg	5 Meg	80 Meg	$700
Mac IIvi	20 Meg			
Mac IIvx	20 Meg			
Mac LC	10 Meg			
Mac LC II	10 Meg			
Mac LC III	36 Meg			
Mac LC 4xx	36 Meg			
Mac LC 5xx	36 Meg	8 Meg	250 Meg	$950
Mac LC 6xx	36 Meg			
Centris 610	36 Meg	8 Meg	23 Meg	$700
Centris 650	36 Meg			
Classic	1 Meg	4 Meg		
Classic II	2 Meg	10 Meg	80 Meg	$600
Color Classic	4 Meg	10 Meg		
Performa 40x	10 Meg			
Perf. 410	10 Meg			
Perf. 430	10 Meg			
Perf. 450	36 Meg			
Perf. 46x	36 Meg			
Perf. 47x	36 Meg			
Perf. 55x	36 Meg			
Perf. 57x	36 Meg			
Perf. 600	20 Meg			
Perf. 600 CD	20 Meg	5 Meg	160 Meg	$650
Perf. 63x	36 Meg	8 Meg	250 Meg	$900
Perf. 63x CD	36 Meg			
Perf. 64x CD	36 Meg			
Perf. 52xx CD	64 Meg	8 Meg	800 Meg	$1100
Perf. 62xx CD	64 Meg	8 Meg	1.0 Gig	$900

Model	RAM Maximum	RAM Typical	Typical Hard Drive	Typical Price
Perf. 63xx	64 Meg	16 Meg	1.2 Gig	$1200
Perf. 64xx	136 Meg	16 Meg	1.6 Gig	$980
Quadra 605	36 Meg	4 Meg	80 Meg	$500
Quadra 610	68 Meg	4 Meg	230 Meg	$600
Quadra 630	36 Meg			
Quadra 650	136 Meg	8 Meg	230 Meg	$700
Quadra 660 AV	68 Meg	8 Meg	250 Meg	$900
Quadra 700	20 Meg			
Quadra 800	136 Meg			
Quadra 840 AV	136 Meg	8 Meg	230 Meg	$1200
Quadra 900	64 Meg			
Quadra 950	64 Meg			
PowerBook 140	40 Meg	4 Meg	40 Meg	$400
P'Book 150	14 Meg	4 Meg	15 Meg	$700
P'Book 16x	14 Meg	4 Meg	120 Meg	$750
P'Book 180	14 Meg			
P'Book 190	40 Meg			
P'Book 270c		4 Meg	240 Meg	$1000
P'Book Duo 2xx	44 Meg	4 Meg	80 Meg	$550
P'Book 5xx	36 Meg	4 Meg	240 Meg	$800
P'Book 1400cs	40 Meg	12 Meg	750 Meg	$1700
P'Book 23xx	44 Meg			
P'Book 3400	144 Meg	16 Meg	1.3 Gig	$3900
P'Book 53xx	40 Meg	16 Meg	750 Meg	$1800
Power Mac 4400	72 Meg	32 Meg	2.0 Gig	$1800
P. Mac 6xxx	72 Meg	32 Meg	4.0 Gig	$2300
P. Mac 71xx	72 Meg			
P. Mac 7200	72 Meg	16 Meg	1.2 Gig	$1200
P. Mac 7300	72 Meg	16 Meg	2.0 Gig	$2100
P. Mac 7500	72 Meg			
P. Mac 81xx	72 Meg			
P. Mac 8500	72 Meg			
P. Mac 8600	72 Meg	32 Meg	2.0 Gig	$3000
P. Mac 9500	144 Meg	16 Meg	1.0 Gig	$2400
P. Mac 9600	72 Meg		4.0 Gig	

Not listed are Power Mac clones by Motorola, Power Computing, and UMAX. Many of these are excellent computers and cheaper.

In the Spring of 1994, the Army Corps of Engineers released twenty-five river otters into the Kentucky River near the school where we have our camp. I saw two of them the next day near the river bank, moving downstream, but another was reported a long way up Squabble Creek, which flows into the river near the point of release. There are too many rifles in this area for them to survive long, despite notices in the post office telling people what they looked like and asking folks to leave them alone. At least one fisherman I know was unhappy. They were catching fish, and he wasn't.

I recruit every summer on the Otter Creek road, and a young girl there challenged my pronounciation. "It's not Ot'-ter Creek," said she, "it's Ought'-er Creek." I haven't looked in the dictionary for a third opinion, but folks who live there, certainly, do say "Ought-er."

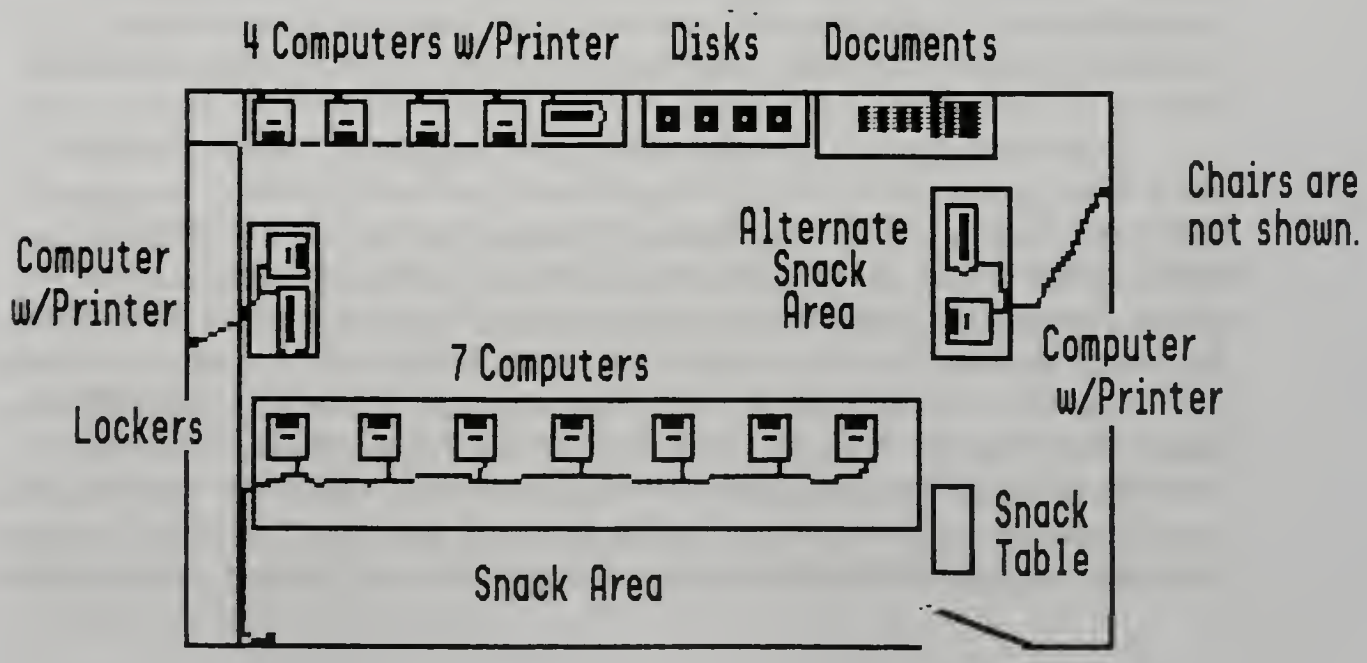
Layout of the Computer Room

Under this heading I will discuss my computer room, its layout, and the arrangement of peripherals and accessories.

The size of the room will depend upon the number of computers and the number of children. I find that thirteen or fourteen computers are as many as I can handle when they are running different programs, and I plan for twenty children in the computer room, although the ideal number is somewhat less. It is sound policy to exclude food and drinks from the computer room, but I like to provide a computer demonstration for the younger children during their pop and candy time after lunch. I accomplish this by partitioning the computer room so that there is a main area where snacks are not permitted and a much smaller area for snacks. The computer used for demonstrations has a membrane over the keyboard in case of accidents. You may prefer to set up a demonstration computer in your snack room or to dispense with the snack, the demonstration, or both.

I arrange the computers so that I can see all the screens while standing in the middle of the room, rather than having the computers in rows with kids trying to see me from the other side of their monitors. If the school has hard-wired the computers in rows before you get there, talk to the kids from the side of the room, or you will do a lot of walking. My arrangement is "less like school," and this is an advantage when dealing with kids who don't do well academically.

Here is a typical layout. It will vary with the available equipment, especially the number of printers, and the size and shape of the room.



Most schoolrooms include a teacher's desk and chair. I turn the desk so the drawers are against the wall and cannot be opened. If the teacher's chair is on casters, I sandwich it between the desk and the wall; otherwise, the children fight over it. The seven computers in my diagram set on two lunchroom tables placed end to end. This is particularly convenient if the tables have built in benches. I place plywood under the center computer between the two tables. This covers the crack and allows me to turn one computer and its peripherals toward the snack area for demonstration purposes.

Space the computers far enough apart so two children can use them at once if they are sitting in chairs, and three at once if they sit on a bench. The newest and most attractive equipment belongs where it can be used by as many children as possible.

Extra chairs get in the way and take up room. Have enough chairs to allow two at each computer on the first day and add a couple or fold a couple up when you find out the pattern followed by your children. There should be a comfortable, adult-sized chair along the wall for a visiting supervisor or parent, but keep your teenaged assistant out of it.

The four computers at the top of the diagram are under the windows of the room. Rather than use tables there, I cut plywood pieces thirty inches deep and three feet wide. There are bookcases under the windows, where I place the plywood so that its leading edge extends into the room, while the back edge is secured to the bookcases with two wood screws. The children have plenty of leg room, and the bookcases can store textbooks if necessary. There is also a radiator under the windows that I cover it with plywood to create a shelf for documentation or the boxes that store the floppy disks. At the end of the summer I fill the holes I make with plastic wood and put a dab of paint on each.

Despite the figure, I do keep disks in their envelopes. If you don't have many disks, spread them out on a large table top or display them in a magazine rack. I have enough that I keep them in separate boxes labelled **System Disks**, **Educational Disks** (3.5"), **Educational Disks** (5.25"), **Adventure Disks** (3.5"), **Adventure Disks** (5.25"), **Saved Games**, **Games: Do not open this box until you are told to do so!** (3.5"), and **Games: Do not open this box until you are told to do so!** (5.25") The disks are color-coded along the upper edge so that I can get them back in order without reading labels. For instance, a "drawing program" has a quarter-inch yellow bar at the right edge. I use oil-based enamel. Choose your own color scheme, but make sure the paint is thick enough not to get through the crack along the top edge of the 3.5" plastic cover. Utilities

and other disks that I use to run the camp are in other boxes out of sight. There should be plenty of space around the disk boxes. Have a tray or empty box there for children to use when returning software.You won't need a whole box for the purpose, but have a designated place for empty 5.25" envelopes that turn up.

Some children are clumsy and others do not treat disks kindly, so make copies of commercial disks, if you can, and use these copies. Unless you are artistic and have more time than I do, the original disks will have prettier labels than their copies, so hide the originals where the children won't find and use them. Seven year olds, particularly, do not understand why they should have to wait for a game after they find another one in a desk drawer.

The documentation that comes with the programs I use varies from a stack of pamphlets and a bound book (**Where in the World is Carmen Sandiego?**) to nothing at all (**Plunder**). I keep real books on a shelf next to the disks, but all the pamphlets and booklets go into an accordian file with compartments A, B, C... When I had fewer disks, I used four drawers, A-F, G-L, and so on. You won't need to keep the pamphlets in more order than that. The kids won't put them away unless you make them, and you'll prevent errors if you do the filing yourself.

I have specific goals for the children to meet, and it maintains interest to have a chart on the wall to record the progress they make in attaining them. To avoid undesirable competition, record only their daily attendance, completion of lessons, and the accumulation of points up to a predetermined minimum. Points earned beyond the minimum are recorded privately.

Make sure that you can lock the computer room and that you have a key. If you cannot lock it, things will move around when you are not there, even if nothing vanishes. A lock makes everyone happy. You feel that the room is secure, while building personnel know that you will not blame them for anything that goes wrong in a room that they cannot enter.

Power cables, connectors, and other wires need to be out of the way. At one camp I made the mistake of placing computers back to back with the children facing each other across a wide table. From time to time a child at one computer could not resist the temptation to pull the power cord, accidently, of course, of another child's computer. This behavior causes trouble and can damage equipment. Cords are better out of temptation's way, so I place them against the wall whenever possible. If the table is not located near a power outlet, do not violate fire laws by covering the cords with a board or some other material. Instead, run it straight up and across the ceiling. There are more safe ways to hang a wire than to cover one.

I use inexpensive surge protectors in the wall sockets, and I unplug the computers at night and during electrical storms. How can I run a computer camp with the computers unplugged? We sit in a circle on the floor and listen to the thunder while I tell ghost stories.

The setup at each computer consists of the computer and keyboard, a monitor (preferably on a stand above the computer), a joystick with the cord led back to the right rear of the computer, a mouse pad and mouse, with the cord led back to the left side of the computer, an on-off switch that controls the whole system, usually incorporated into a system fan, a 5.25-inch drive and — if I can afford it — two 3.5-inch drives. CD-ROM drives are not yet a standard, but the day is coming when they will be. As shown in the figure, the three computers with printers have more space than the others.

Choosing and Locating Peripherals

After indicating sources of supply, I will evaluate the usefulness of various peripherals at a computer camp. There is a wide range of prices since products vary in their features and in quality.

VENDORS

ABC Direct, 1-800-800-3680, abcdirect@aol.com, sells and supports the Applied Engineering (AE) line. AE invaded the Apple II market with exceptional peripherals at reasonable cost, providing strong competition to Apple's own products. Their specialties were RAM boards and accelerator coprocessors, but they also had a full line of disk drives and other peripherals. Their PC Transporter board, for the cost of a IBM clone, allowed you to run MS-DOS (IBM) programs with an Apple II. Around 1993 they moved strongly into the Macintosh market, and not long after, went out of business.

Alltech Electronics Company, Inc., 602 Garrison Street, Oceanside, CA 92054; 1-800-995-7773 (orders); 1-619-721-7733 (support); 1-619-721-2823 (FAX); 1-619-721-0705 (BBS). In addition to IBM and Macintosh peripherals, Alltech sells new and used manuals and equipment for the Apple II. They respond immediately to requests for information. When I had a question about an Apple 3.5" drive they sold me, I had minimum difficulty reaching a helpful technician on the phone, who offered to take the drive back if the problem persisted (it didn't). They are the sole source for the Apple IIGS **SoundMeister** card.

APS Technologies, 6131 Deramus, Kansas City, MO 64120; 1-800-677-3294 (orders); 1-816-920-4109; www.apstech.com. I have not dealt with APS. They specialize in storage devices: hard drives, tape drives, CD-ROM drives, and such.

Boston Computer Exchange, P. O. Box 1177, Boston, MA 02103; 1-800-262-6399; 1-617-542-4414; 1-617-542-2345 (FAX). Mentioned by Sheane Meikle in "Apple II Bargain Bonanza," *II Alive*, 1(4), 1993, p. 32, the Boston Computer Exchange keeps no inventory of computers, but they match potential buyers and sellers for a brokerage fee. Contact them directly if you want to know more. I have not used their service.

Charlie's AppleSeeds, 9081 Hadley Place, San Diego, CA 92126-1523; 1-619-566-1297 (voice or FAX); GEnie: A2.CHUCK. Periodically, GEnie A2 Roundtable used to see an advertisement (excuse me, product announcement)

from Charlie's for Apple II hard drives varying from 42 to 520 Meg. The postings were lengthy with appropriate details. When the Apple II market dried up, he went out of business with unsold inventory; however, he is still on the A2 bulletin board and responds to questions about equipment.

Computer Friends, Inc., 14250 N. W. Science Park Drive, Portland, OR 97229; 1-800-547-3303 (orders); 1-503-626-2291 (support); 1-503-643-5379 (FAX). My request for information brought an immediate, long list of support products such as ribbons, inkers, and cartridges for about 400 different printer models.

Creative Solutions, Box 340850, Beavercreek, OH; 1-513-429-5759. Gene and Carol Dalrymple advertise that Creative Solutions is a small business aiming at satisfied customers. In addition to selling new and used systems and peripherals, they repair Apple, Franklin, and Laser 128 products. They also carry new and discontinued software. When I wrote to them in 1994 for information and a quote on a printer, they responded by return mail, but they asked more for the printer than I wanted to pay. At that time they specialized in the Apple II, but had a limited supply of IBM and Macintosh items.

Jameco, 1355 Shoreway Road, CA 94002-4100; 1-800-831-4242 (orders), 1-415-637-9025, 1-415-572-9675 (FAX). Jameco is one of the few remaining sources for Apple II power supplies. They have a full line of cables and other electrical supplies and provide an attractive catalog. I still use their inexpensive 64K RAM cards in my Apple //e computers.

Kensington Microware Ltd., 2855 Campus Drive, San Mateo, CA 91752; 1-800-535-4242; 1-415-572-2700; www.kensington.com. Kensington manufactures exceptional fans, trackballs, and other peripherals. Uploads on the GEnie A2 Roundtable compliment their trackballs and praise them for customer service. I have used their products, but have not contacted them directly.

MacMall, 2645 Maricopa Street, Torrance, CA 90503; 1-800-222-2808 (orders), 1-310-787-4500, 1-310-222-5800 (FAX). MacMall sells at discount all sorts of Macintosh equipment including drives, modems, and printers. Incidentally, external SCSI drives work as well on an Apple II as they do on a Mac, and the same can be said for ADB keyboards and mice. I have not used their services.

MacWarehouse, P.O. Box 3013, 1720 Oak Street, Lakewood, NJ 08701; 1-800-255-6227 (orders), 1-908-370-4779, 1-908-905-9279 (FAX). With much the same product line, MacWarehouse provides an east-coast alternative to

MacMall and The Mac Zone. MacWarehouse provides similar product lines for MS-DOS and Windows machines under the name PCWarehouse at the same address. I have not ordered from them yet.

The Mac Zone, 707 South Grady Way, Renton, WA 98055; 1-800-248-0800 (orders), 1-800-248-9948 (customer hotline); 1-425-430-3570; 1-425-430-3550 (FAX), www.maczone.com. I haven't used Macintoshes at my computer camp, but I ordered my Iomega Zip drive from them as well as software for friends and relatives. They provide quick service, and I defy you to get off their mailing list!

MCTA, 1-310-568-2002, provides support for the Apple IIGS ZIPGS accelerator. That is all I can tell you about MCTA.

Memory Plus Distributors, Inc., 7902 E. Pierce Street, Scottsdale, AZ 85257; 1-602-820-8819; 1-602-968-3211 (FAX). I have purchased RAM cards, disk drives, a mouse or two, and joysticks for Apple II computers from Memory Plus several times over the last few years, and I have always been satisfied with their service. They are not expensive, and they will take time to answer your questions. They are one of the few remaining sources for joysticks and peripherals for older computers.

MidWest Micro, 6910 U. S. Route 36 East, Fletcher, OH 45326; 1-800-552-8080 (orders); 1-800-242-0313 (customer support); 1-800-262-6622 (technical support); 1-513-368-2309 (local or international); 1-800-562-6622 (FAX). I order floppy disks and printer ribbons from MidWest Micro once in a while, and they keep me on their mailing list. In addition to computer supples and Elite-brand computers, they offer many peripherals for IBM/compatible systems. There is an emphasis upon printers, with a dozen brands available, but they also list drives of all sorts, I/O cards, memory and coprocessor chips, keyboards, joysticks, monitors, and graphics cards at discount prices.

MP Computer Micro Systems, 655 W. Evelyn Avenue #2, Mountain View, CA 94041; 1-415-960-1514; 1-415-968-0509 (FAX). I have had no dealings with MP, who were complimented by Sheane Meikle for courtesy in his *II Alive* article. They advertise regularly in *Computer Shopper*.

Parsons Engineering, 5010 Rimhurst Avenue, Covina, CA 91724; 1-818-966-5538; 1-818-966-5701 (FAX). My request for information brought a prompt response in the form of a price list for Apple II internal hard disks, the FOCUS Hard Cards with capacities of 20 to 213 Meg memories. Specifications for the FOCUS line were included as well.

PCWarehouse (see MacWarehouse, above)

Perfect Solutions, 12657 Coral Breeze Drive, West Palm Beach, FL 33414; 1-800-726-7086; 1-407-790-1070; 1-407-790-0108 (FAX). Specializing in Laser clones, Perfect Solutions also sells many brands of common peripherals as well as less usual items, such as scanners and digitizers, for the Apple II, IBM, and Macintosh lines. They offer discounted software for purchases exceeding $200. They responded to my 1994 letter as soon as they got it.

Pre-Owned Electronics, 205 Burlington Road, Bedford, MA 01730; 1-800-274-5343; 1-617-275-4600; 1-617-275-4848 (FAX). A center for the repair and replacement of Apple computers, Pre-Owned Electronics offers an economical solution to the problem of equipping a camp. They service both computers and peripherals. I used to receive equipment lists from them from time to time, but either I ordered too seldom, or they no longer maintain a mailing list. My last order, for two used Apple RGB monitors, was satisfactory, and the monitors are still in use. *Computer Shopper* lists without prices the many items they sell.

Scantron Quality Computers, 20200 Nine Mile Road, P. O. Box 349, St. Clair, MI 48080; 1-800-777-3642 (orders); 1-313-774-7740 (support); 1-313-774-2698 (FAX); 1-313-774-2652 (BBS). Previously Quality Computers, Scantron was one of the last suppliers to try to be all things to all people in the Apple II world and succeeded as well as can be expected. The company emphasis is now on Macintosh and IBM lines, but it still publishes a thin catalog entitled **Nothing but Apples** for the Apple II. I have made almost all my major purchases of new equipment from them in recent years with no significant problems. They respond promptly to mail, E-mail, and phone calls, and when the hard drive I bought from them failed during the warranty period, I received an immediate replacement with all my files intact. What is more, since they no longer sold the 120 Meg size, they replaced it with a 170 Meg.

Shreve Systems, 1200 Marshall Street, Shreveport, LA 71101; 1-800-227-3971; 1-318-424-9791; 1-318-424-9771 (FAX); www.shrevesystems.com. Shreve does not advertise widely. They buy, sell, replace, and repair used computers and their peripherals, listing items for sale in *Computer Shopper* and some educational journals. Their inventory fluctuates, so they do not publish a catalog. Sometimes a flier is issued. Check their Web page.

Sun Remarketing, P. O. Box 4059, Logan, UT 84323-4059; 1-800-821-3221 (orders); 1-801-755-3360 (support); sales@doc.sunrem.com; www.sunrem.com. According to Sheane Meikle, Sun has a large inventory, but its sales staff aren't

well informed about the Apple II lines. The fliers I have received following my request to Sun certainly emphasized equipment for the Macintosh, but there were many Apple II items as well, including new Apple //e's for $99. They also offer a telephone consultant for technical problems unrelated to their orders: 1-900-786-7782 ($2/minute). For $20 a year they will send you their advertisements as soon as they are sent to magazine publishers and lists of sale items available in limited quantities; however, you'll get most of the same information from their Web page.

USA Micro, 2888 Bluff Street, Suite 257, Boulder, CO 80301; 1-800-654-5426 (orders); 1-303-938-9089; 1-303-939-9839. A direct source for Apple and IBM compatible computers, USA Micro emphasizes Laser systems and their peripherals.

Vitesse, Inc., 13909 Amar Road, Suite 2, P.O. Box 929, La Puente, CA 91747-0929; 1-800-777-7344 (orders); 1-818-813-1270 (service); 1-818-813-1273 (FAX). In addition to publishing the well-known Salvation line of hard-disk management software for Apple IIGS and IBM/compatible systems using Windows, Vitesse sells complete computer systems, peripherals, and software.

EVALUATIONS

In the tables that follow I have indicated the cost of various peripherals and used "academic" letter grades to assess their value at a computer camp. Interpret the grades as follows:

A: Equip every computer with this peripheral. The system is incomplete without it.

B: Although not essential, these items are very useful if you can afford them.

C: In this category are the items which are somewhat helpful and items that cost more than they are worth. Don't try to get one for every computer.

D. These items have little value at a computer camp or they are prohibitively expensive. You may want one for camp administration.

F. Do not accept these even as gifts. Their use is disruptive, they require excessive maintenance, or they may cause damage to the computer or other peripherals.

Accelerators

An accelerator is a device that causes the machine to operate more rapidly. There are a number of techniques for doing this, ranging from faster microprocessors to storing (caching) frequently used material in memory to reduce disk readings. All of these are important to those who use computers at work, but few benefit a child at a computer camp. Spend your money on something else.

Typical Description	Cost New	Cost Used	Camp Value
TransWarp //e	90		C+
TransWarp GS 7 MHz w/32K cache	300		C
7 MHz Zip w/8K cache (any II)	140		C-
8 MHz Zip w/16K cache (IIGS)	179		C-
8 MHz Zip w/64K cache (IIGS)	239		C-
9 MHz Zip w/32K cache (IIGS)	239		C-
9 MHz Zip w/64K cache (IIGS)	299		C-
10 MHz Zip w/64K cache (IIGS)	399		C-

Clocks

Attached to the motherboard of the Apple IIGS is a battery powered clock that is convenient for dating documents that are prepared with AppleWorks, but the clock is not used at computer camp. A "No-Slot Clock" that was inserted into a slot in the motherboard under a ROM chip worked flawlessly on my Apple //e for several months, but then my microprocessor began to malfunction, and did not return to normal until I removed the clock chip. A clock card is too expensive for its value to a computer camp.

Typical Description	Cost New	Cost Used	Camp Value
Clocks (models older than IIGS)		40-70	C-

Coprocessors

A coprocessor is a "computer on a card," that allows someone seated at an computer to run a different operating system. Apple users will find little software available for the old CP/M system, but there are thousands of programs that run under MS-DOS. The principal objection to a coprocessor at a computer camp is the difficulty of teaching children to use two different operating systems. If you wish to use MS-DOS software at an Apple II based camp, an inexpensive IBM compatible system is a better value than a coprocessor.

Typical Description	Cost New	Cost Used	Camp Value
CP/M card	37	18	D
MS-DOS (requires HD Drive)		350	C

Digitizer pads

High resolution digitizer pads, such as are used with CAD (engineering) programs, are much too expensive for a computer camp, and their extreme precision is not needed. Less expensive alternatives, such as the Koala pad, appear from time to time, and the Koala Pad is still available from Education Resources and other education supply houses. It is the least expensive of the touch pads used as an alternative to a joystick and better adapted to activities like drawing. I still use Koala software, but the children use joysticks now. The Koala pads are great while they last, but after a few weeks they develop an unfortunate tendency to draw their own lines on the screen.

Typical Description	Cost New	Cost Used	Camp Value
Digitizer, high resolution	1200		D-
low resolution	80	35	C

Displays

When personal computers first reached the market, many people used their TV set as a display, and it is still possible to buy an RF modulator to do just that; however, the picture quality is poor and many TV sets are too large. On the other hand, a used color TV set can be acquired for very little at a pawn shop, and a friend of mine was given a color TV that had a working monitor but defective receiver. One year when I had both a huge TV set and a small monochrome monitor at computer camp, the smaller children preferred the TV set.

Until 1997 I used one monochrome monitor at my camp. It was connected to an Apple][+ that ran **Print Shop**. The original **Print Shop** graphics weren't colored, so that wasn't a problem. Most monochrome monitors have excellent resolution, although one occasionally sees a composite monochrome monitor for sale, and all composite monitors have inferior graphics. When your RGB monitor begins to get fuzzy and dark, a cheap monochrome monitor will regain that razor-sharp image for you.

Color composite monitors, which have resolution not much superior to a television set, are inexpensive and can be used with Apple II, Commodore, and old

MS-DOS educational programs. I gave away my last composite monitor this year, but they will do. An RGB monitor is preferred, if you can afford one. In most cases the two can be distinguished by looking at the cable connector. The cable for a composite model ends in a simple RCA jack, while an RGB cable has at least a 9-pin connector. I prefer used RGB monitors to new composite models.

Apple used to manufacture what it called an AppleColor Composite Monitor. These give resolution not much inferior to RGB machines despite having RCA plugs.

Some monitors are sold with several inputs for various uses. The outlet for a color composite monitor is usually labelled NTSC. A long standing joke has it that the initials stand for "never the same color."

Just as an Apple IIGS deserves 4 Meg of RAM to use its capabilities, strong consideration should be given to equipping each IIGS with an AppleColor RGB Monitor. The difference in quality is unmistakable. The older Apple Computer RGB Monitor (without the AppleColor designation) is too heavy and did not follow some of Apple's own protocols, so some software runs on it with a monochrome display.

MS-DOS machines began with monochrome displays and moved to color composite screens. Next were SGA monitors, still available on the used market, and better than nothing; however, the VGSA models that followed became industry standards, and that is what you get when you buy a monitor for an MS-DOS/Windows computer. Sequential Systems manufactures a **Second Sight** card for $150 that brings VGSA technology to the Apple II line. I haven't bitten the bullet to update my computers beyond the reliable and easily available Apple RGB monitors, because little Apple II software makes specific use of VGSA resolution.

(Camp value for: //e, //c or][+ / IIGS)

Typical Description	Cost New	Cost Used	Camp Value
RF modulator for TV set	15	9	B /C-
Monochrome (for 80 col.)	130	35	B-/D
Composite color	129	80	B+/C
RGB color	225	125	B /A
VGSA color	250 & up	80 & up	- /B

Drives

At the moment, educational software is still being published on 5.25 or 3.5-inch floppy disks, although an increasing amount is being released in CD-ROM format. I regard it as essential that there be one or two 5.25-inch drives at every computer in my camp, and that there be one or two 3.5-inch drives for every Apple IIGS. If you use AppleWorks on an Apple //e, //c, or Laser 128, this computer should have a 3.5-inch drive, too. A hard disk is a joy to have on your personal computer, but is not helpful at a computer camp if you can afford neither hard drives for every computer nor site licenses to fill the hard disks with programs. High-density storage drives with removable 100-Meg disks, like the Iomega Zip, can be used as boot devices; however, their best use is to back up hard drives quickly and easily. One such drive is all that can be used at a computer camp, but they are wonderful for personal use. Both Iomega and SyQuest make drives with higher capacity (and cost). I am not yet convinced that more than a single CD-ROM drive is justified at a camp using Apple II systems. Camps using Macintosh or IBM/clone machines should get CD-ROM drives as soon as they can afford them. Used high-density storage devices sell for about 35 percent of their original value when you can find them.

Floppy disk drives: Camp value: //e or][+ / IIGS

Typical Description	Cost New	Cost Used	Camp Value
5.25-inch	139	79	A+/B+
3.5-inch, 800K	196	165	B /A+
Controller card for these	30 - 60	39	A+/-
3.5-inch, 1.44 MB	230		C /C
Controller card	135	39	C /C

Removable cartridge drives:

CD-ROM, read-only	200 & up		C- (Apple II) B+ (other)
Floptical, 20 MB	420		D-
disk	20		
Magneto-optical, 130 MB, 40 ms	1200		D-
disk	50		
Magneto-optical, 650 MB, 60 ms	2700		D-
disk	150		
Controller card for optical drives	180		
Zip Drive	150		D /C
100-Meg disk	16		
EZFlyer Mac	200		D /C
230-Meg disk	30		
Jaz Drive	400		D /D
1-Gig disk	125		
SyJet Drive	500		D /D
1.5-Gig disk	125		

Floppy disk drives: Camp value: //e or][+ / IIGS

Typical Description	Cost New	Cost Used	Camp Value
Hard drives:			
External, 80 Meg or smaller	200		D-/B-
External, 170 Meg	350	179	D-/B-
External, 1.2 Gig	350		D-/C-
External, 4.5 Gig	900		D-/D-
SCSI card for external HD, add	120		
SCSI card w/256K cache, add	130		
Internal, 20 Meg	60		D-/B
Internal, 40 Meg	90		D-/B-
Internal, 120 Meg	120		D-/C

Fans

Any Apple II with open architecture (][+, //e, IIGS) tends to collect cards, and eventually the inside of the computer becomes too hot. The same may happen due to summer weather and old age. The solution is a fan to pull hot air from the computer. I recommend them highly. Some models hang from the side of the computer while others sit beneath it. Fans offer some surge protection, provide AC power sockets for computer peripherals, and allow everything to be turned off and on by a single switch or two. I use these even for the Apple //c and Laser 128, although they provide no cooling where they hang near to the computer.

Typical Description	Cost New	Used	Camp Value
Computer fan (][+, //e)	20		B
w/ surge protection			A+
Computer fan (IIGS)	60		C

Joysticks

Children raised with video games will turn aside from any computer not equipped with a joy stick. The first question I am asked when I suggest a new game to a child is: "Does it use a joy stick?" Once they become used to it, they may try a mouse or track ball, but they will look to the joy stick first.

The finest joystick made for computer camp use is CH Products' "Mach II." There is also a Mach III that is more expensive and includes a third fire button on the stick. I dislike this design because my children damage them by pounding the stick button with the palm of their hand. It may be irrelevant. CH Products have

discontinued the Mach line for Apple II computers. Discontinued also is the Gravis joystick, which is oversized for young children and expensive, with knurled knobs on the side that children too frequently use to disable the fire buttons. Two models by Suncom are priced moderately, but they don't stand up to rough usage, their resistance scales are too low, and they are too easily uncalibrated by children fiddling with the controls. Kraft joysticks, like the Suncom models, are too easily uncalibrated, and, the Kraft line for the Apple II has also been discontinued. At the moment I am rewiring my Mach IIs, which usually die from a broken wire in the cable rather than an actual joystick malfunction. Do not buy a used joystick without trying it first.

Joysticks continue to be made for the Mac and for MS-DOS/Windows machines.

Typical Description	Cost New	Used	Camp Value
Joy stick	20 & up	10 - 20	A

Keyboards

The keyboards for portable Apples, the //c, //c+, and Laser 128, are a little small for extended use, and other models are advised for word processing; however, children do not object to the smaller keyboards and rarely use numerical keypads, even when they are supplied, as they are on platinum Apple //e's. Consequently, I do not recommend the Apple Extended Keyboard for computer camps. Should you purchase the PC Transporter to enable the running of MS-DOS programs, strong consideration should be given to buying a keyboard with IBM function keys. If you purchase a Macintosh keyboard for use with an Apple IIGS, you will not find a reset button. Instead, press the on/off key in the upper corner while holding down the <Control>, <Option>, and the "Open Apple" keys.

Educators are aware that standard keyboards frustrate young children, and several alternatives have been provided. I like the Muppet Learning Keys, although only my youngest campers make use of the colorful keyboard. The Intellikeys alternative appears very well thought out and can be modified, as the Muppet keys cannot, for specific uses; however, the Intellikeys option is an expensive one.

Typical Description	Cost New	Used	Camp Value
Apple Extended	119	80	D-
Mac Keyboard	40	30	A+
MS-DOS compatible	16 & up	36	A+
Muppet Learning Keys w/disk	129	35	B
Intellikeys	360		B

Light pens

When touched to the monitor screen, a light pen reads illuminated pixels there and communicates with the computer. Allowing the user to write directly to the computer screen, a light pen is a natural for graphics programs and popular with the children. I have not seen a new one advertised in some time, but if you find one, try it.

Typical Description	Cost New	Used	Camp Value
Light pen			B+

Modem

I make no use of modems at my computer camps, since I would be paying long distance charges at day rates for all my calls. I have used a modem at home to access the CompusServe and Genie online networks. The original Hayes MicroModem, costing only $5 used, might be considered as a means of letting one computer in your camp communicate with another, but in that case it makes better sense to set up a network in the computer room. I know of at least one teacher who is motivating schoolchildren at an inner-city middle school by linking them by modem to children elsewhere. Don't refuse to consider a modem simply because I don't use them. The price of modems drops continually, and it is now hard to find a baud rate slower than 14.4K on the market, so I have not listed new prices for slower models. Modern modems include FAX capability as well.

The popularity of the Internet suggests setting up one or more work stations, so that children may go on line for class projects and individual exploration. Most of my children are too young to have the necessary typing and reading skills, but don't hesitate to use the Internet with children in the upper middle school or high school. Some supervision will be required. There are systems, like LINQ from Scantron Quality Computers, which give teachers total control over which Web sites are available to their students.

Typical Description	Cost New	Used	Camp Value
External			D
300 baud		5	
1200 baud	50	20	
2400 baud		30	
9600 baud		60	
14.4 k baud	84 & up		
33.6 k baud	100 & up		
Internal			D-
300 baud		5	
1200 baud		30	
2400 baud		45	
9600 baud		60	
14.4 k baud	65		
28.8 k baud	140		
33.6 k baud	140 & up		

Mouse devices

Software written for the Apple IIGS works better with a mouse than a joystick, although both are often supported. I recommend having a mouse for every IIGS at a camp. Even when used for game-playing, they last longer than joysticks. Select a mouse designed to plug directly into the computer rather than one that connects to a card in an expansion slot, or some programs, such as Chessmaster 2100, will be unable to access the mouse. The mouse is not particularly useful with Apple models other than the Apple IIGS, but occasional programs, like Dinosaurs Are Forever, will use it. The mouse for MS-DOS / Windows machines is much less expensive than the one used with Apple computers.

Typical Description	Cost New	Used	Camp Value
Mouse (Apple)	70	35	A+
Mouse (MS-DOS/Windows) .	8 & up		A+

Printers

A computer camp does not require a printer, but campers enjoy having something to take home, and a computer without a printer is not much help for camp administration.

Most of my camps have been run with one printer for every six computers, and that is adequate; however, when I have increased the ratio to one printer for four computers, I saw the benefits. It is unlikely you would need more. I do

restrict printer use a little: campers may not make banners (too much paper, too much time watching the printer, too little creativity). Computer campers type very slowly, and both serial and parallel interfaces work adequately. One of my printers has a large buffer, but it is more of a headache than a convenience with the children. A buffer is handy for camp administration. You can continue to work on the computer while the printer is pushing out paper.

A dot matrix printer is adequate for most camp needs, including administration, although older 9-pin models are slow. Buy a 24-pin if you can afford it. Color is nice, but the children won't miss it if it isn't offered. To save space, I have listed dot-matrix printers by Panasonic, a well-known, reliable line that is widely advertised. There are many other reputable manufacturers! The Apple workhorse is the ImageWriter II, which is reasonably fast, reliable, and, on the used equipment market, cheap.

Don't consider a daisy wheel printer. They are costly, noisy, harder to maintain, and don't provide a graphics capability.

An ink-jet printer is an excellent compromise between the cost of a laser printer and the poorer definition of a dot matrix machine; however, the children aren't fussy, and the letters you write with a dot matrix printer are more likely to convince sponsors that you aren't wasting their money. I do not recommend pairing a dot matrix printer with an ink-jet model in the same computer room. Under those circumstances the children will not like their dot matrix images. There is also no need to spend money for built-in printer fonts. Prices are from the Hewlett-Packard line.

Laser printers are still too expensive for computer camp use. Consider one for administration if you like.

Typical Description	Cost New	Used	Camp Value
Interface cards:			
Interface card for][+ or //e	60	20	A (1)
Same, w/1 Meg buffer	113		C-
Dot matrix printers:			
Panasonic, 9-pin, 240x216, 160-240 cps	130		B-
Apple IWII, 9-pin, 160x144, 45-250 cps		80	B+
Panasonic, 24-pin, 360x360, 167-250 cps	170		B-
Panasonic, 24-pin, 360x360, 35-320 cps	315		B-

Typical Description	Cost New	Used	Camp Value
Ink jet printer:			
HP color, 600x300, 1.5-4 ppm	200		C+
HP color, 600x300, 1.7-5 ppm	300		C+
HP color, to 600x300, 4-6.5 ppm	300		C+
HP color, 600x300, 4-8 ppm	400		C+
Daisywheel printers:			
None appropriate	450	250	F
Laser Printer (typical):			
HP, 600x600, 6 ppm	850		D

Projection plates

If I were teaching a computer class, rather than a computer camp, I would want to be able to use an overhead projector to show the computer screen to the whole class. At computer camps, a projection plate would be handy during the lesson portion of the program and would make my snack time demonstration somewhat easier to see, but kids' programs require color, and colored projection plates are very expensive.

Typical Description	Cost New	Used	Camp Value
Projection plate, monochrome	800 up		C
Projection plate, color	2000		B

RAM

Apple II series. Most Apple II models will benefit significantly from additional random access memory (RAM); however, the amount of memory needed varies from model to model.

An Apple][+ should be upgraded from 48K to 64K by the addition of a 16K RAM card. Although the only Apple][+ at my camp is dedicated to the use of **Print Shop**, the][+ is used occasionally for other purposes. The extra 16K is worth the small expenditure. There are still a significant number of 64K programs, including **Logo**, available through educational supply houses.

The Apple //e will run 64K programs, but it makes sense to add the combined 80-column/64K RAM card. The 80-column capability is needed for

word processing, and the additional memory will allow the use of all the 128K programs still on the market. The so-called "platinum" Apple //e's, incidentally, were shipped with 128K of RAM.

Adding memory to the Apple //c, //c+, or Laser 128 is awkward and unnecessary and should be considered only if there is no other computer that will run AppleWorks for camp administration.

Compared with other Apples, the Apple IIGS is a memory hog. Try to add 4 Meg to each Apple IIGS. Without the added memory, the Apple IIGS is little more than a fast Apple //e. The good news is that Apple II's require only a fraction of the RAM needed by Windows machines and the faster Macintoshes.

Typical Description	Cost New	Used	Camp Value
16K (for][+)	$36	$16	A
64K Get the 80-column version!			
64K w/80 col. (for //e)	39	20	A
256K (for //c)	93	45	C
256K (for //e)	62	35	B-
512K (for //c)	105	60	C-
512K (for //e)	74	40	C+
1 Meg (for //e or IIGS)	99	50	B
4 Meg (for IIGS)	130	90	B+

Macintosh RAM. In the earlier section on computers there was a list of Macintosh models, listing typical RAM configuarations and the maximum RAM available. These maximum amounts are rarely necessary in any case, and since computer camps use educational software, will usually need only the standard RAM recommended by educational programs. For example, School World Software does not list RAM requirements, but lists two levels of compatibility: **MAC**, which requires a Macintosh operating system, and **PMAC**, requiring a Power Macintosh operating system.

IBM/clone RAM. There are five levels of compatibility for IBM machines and their clones, expressed in terms of the appropriate operating system. If the computer has the operating system installed, the software will run. The levels are: **DOS**, which requires the MS-DOS operating system, **OS/2**, which requires the OS/2 operating system, and three levels using windows. These are: **WIN** for Windows 3.x or higher, **WIN 95** for Windows 95, and **NT** for Windows NT. The designations may be used together, e.g. **WIN/NT** for software running on either Windows system.

Scanners (ditherizers)

Scanners are devices to transfer images from the printed page to the computer screen. Generally, scanners transfer text, while ditherizers transfer graphics. I do not use either in my camps. A ditherizer is fun, but not worth the cost.

Typical Description	Cost New	Used	Camp Value
Ditherizer	280		C-
Scanner	200		D

Speech card

The Apple IIGS has a built in speech module. The Apple][+ and //e require a speech card for a similar capability. The **Echo Speech Processor** is the best known of the Apple II devices and offers the choice of a natural sounding voice with a limited vocabulary or a more artificial voice that can attempt to pronounce anything typed on the keyboard. You rarely see a used one for sale. MS-DOS machines have similar peripherals: **Sound Blaster**, Echo PC II, and Echo eDSP, to name a few. Macintosh LC computers, or above, with System 7 do not require sound cards. Sound cards can be very helpful when working with blind children or children who cannot read; otherwise, they are not necessary. The cost of an inexpensive set of earphones should be added to the cost of the card. since the computer voice may not be heard in a noisy computer room.

Typical Description	Cost New	Used	Camp Value
Speech card	125	25	C

Sound Card/System

A popular item on every home computer is a sound card or system that provides amplified sound, including commercial audio CD's as well as sound that accompanies software. My computer room is relatively small with fourteen computers spaced an average of four feet apart. The first impression of many visitors is the noise the children make learning, teaching each other, and having a good time. My teenaged aide and I spend a fair amount of our time raising and lowering the sound levels at those fourteen computers. There is little point to a program such as **Jam Session** if one cannot hear the music, but the heavy sound

accompanying Thexder, say, is stimulating, but unnecessary to game play. I cannot imagine the sound levels that would accompany fourteen computers equipped with sound systems. You may try it, if you like. I won't.

Multimedia or hypermedia programs, such as HyperCard and HyperStudio, record sounds and replay them as a part of stacks (programs) created by the student. Audio cards/systems greatly enhance the value of these programs. If you plan to use these in any other mode than having the students sit as a group around one computer, then you had better be prepared to issue earphones, as suggested in the discussion of speech cards.

Typical Description	Cost New	Used	Camp Value
Computer Speaker (any)	25 - 500		C-
SoundMeister (Apple IIGS)	59		C-
Sound Blaster (MS-DOS)	125-229		C-

Touch Screen

Another expensive item that is attractive to children, a touch window fits over the computer display and responds directly to the child's touch. The screen is most useful for very young children and those with developmental difficulties, and a fair number of educational programs have been written for its use.

Typical Description	Cost New	Used	Camp Value
TouchWindow (Apple II)	275		D
Magic Touch (Mac/IBM/clones)	250		D

Track balls

I obtained my first track ball when a wheelchair-bound engineer donated his computer to the camp. They are a favored alternative to the mouse for small desk tops and are becoming standard on briefcase sized portable computers. The one child with limited mobility at my camp found it much easier to use than the mouse, and most of the other children preferred it. Unfortunately, the model we used had four buttons, only two of which work at all with the camp's Apple II software, and only one of which was desirable.

Typical Description	Cost New	Used	Camp Value
Track ball	$80		B

SUMMARY

A computer system is incomplete without a display device and a disk drive, and any system with a graphical interface needs a mouse. It is common sense, and inexpensive, to include a fan that incorporates some surge protection. Children will be unhappy without a joystick. As soon as you can afford it, you should provide color monitors at all your stations. You will need a printer for camp administration. These are the essentials.

If you are using Apple II computers, try to add 16K to each][+, an 80-column card with 64K to each //e, and a 4MB card to each IIGS. It is helpful to have both 5.25-inch and 3.5-inch drives for as many computers as possible and a CD-ROM drive for at least one of them. Try to have at least two printers in the computer room. I use power strips with surge protection between my computers and the wall outlets, even though the fans provide some surge protection also.

Third order priorities include extended memory and a hard disk for camp administration and a modem to get help when you need it. Get one of everything interesting that you can acquire cheaply: light pens, speech cards, Koala pads, and so forth.

Many eastern Kentucky roads cling to the sides of the mountains. In the spring of 1994 it rained and rained, and the road running up the hill from my trailer slid into the valley. As a result, traffic was detoured down a steep, dirt road, along a narrow bottom, and back to the highway on a one-lane asphalt road along the river.

Residents along the detour complained that the detoured traffic was going too fast and the heavier vehicles were damaging the narrow road, but my favorite complaint came from a dog owner.

"I'm writing the governor," he said. "My dog used to chase a car or two, but the evening after they put in the detour he came in so tired he couldn't stir for the next four days!"

Keeping Your Equipment Going

At the end of this section are references to some books I have found helpful when attempting to maintain and repair computers. To define the terms that follow, maintenance is what you do with equipment that is working properly. Troubleshooting is what you try before you panic because something has stopped working properly. Repairs are what you do at night or over the weekend to fix equipment or to verify that it needs to go to a repair shop. The order that follows is not alphabetical, but represents the likelihood, in my experience, of fixing a problem.

CORDS, CABLES, AND CONNECTORS

In a room filled with active children, it is not uncommon for a power cable or connector to become loose or unplugged, and this is the first thing to check. I use fans with switched outlets, so one button turns on the computer and all of its peripherals. When there is a loss of power, I begin by seeing if it affects only one peripheral, the whole computer system, or a row of computers. That leads quickly to the cable that is at fault.

General. A problem with a component, such as a monitor or joystick, is often due to a bad connection where the cable plugs into the computer. Check these junctions and look for changes in the display when they are wiggled.

Joysticks. It is particularly easy for children to uncalibrate Kraft and Suncom joysticks by playing with the slide switches. See if the problem persists when the slide switch is centered and verify that moving the slide switch affects joystick performance. Many inexpensive joysticks have slide switches on the base to switch between Apple II and IBM systems. Check that this switch is in the correct position. I cover these switches with duct tape. Check the connector where the joystick is connected to the computer. If the switches and connectors are all right, use the joystick calibration program on **Camp Master** to see if the buttons work and the stick has readings from -127 to +128 in both directions. If possible, use the slide switches to recalibrate and tape the slide switches in the calibrated positions. Frequently joysticks fail because the connecting cable has been twisted or flexed too many times, and a wire breaks leading, often, to a continuous joystick reading of +128. If so, set the broken joystick aside for rewiring, include a note to remind yourself what the problem was, and insert a new joystick.

Printers. The ribbon cables used by a parallel printer have large connectors that are clamped or screwed in place, so they seldom give trouble if you take the elementary precaution of using the clamp or screws. Serial ports, such as those on the Apple ImageWriter, have connectors that pull out easily. Check both ends of such cables. Printer cables are rarely flexed and give good service.

Disk Drives. Many disk drives plug into connectors in the back of the computer, and the drive will fail if these connectors become unseated. Turn the computer off before adjusting drive connectors or there is an excellent chance you will fry a chip on the drive's analog board.

Mouse. The connector from a mouse, like that from a serial printer, pulls out comparatively easily if you use your mouse too vigorously, so check its connector, also. My Apple IIGS is a modified Apple //e with the mouse cable running to the rear of the computer, rather than to the keyboard. Such computers place more stress on the cable than the conventional design. The button on the mouse usually fails before the wire does, but check the cable by flexing it while watching the cursor on the screen. Some keyboards have two connectors, one running to the back of the computer and one for the mouse cable. Tighten and then try reversing these two cables.

GETTING INSIDE THE COMPUTER

Before opening the computer, turn it off. It is not necessary or desirable to disconnect the power cable, because leaving the power cable in place assures that you have a good ground.

Static electricity isn't much of a problem during a summer computer camp, but the static charge you get by sliding your feet on a carpet during the colder months will damage a computer chip. Get into the habit of discharging such sparks by touching the case of the power supply or some other grounded surface as soon as you open the computer lid. The power supply is the metal box on the left in an Apple computer. To open an IBM computer, set the monitor aside and remove the screws around the rear plate. You should never have a monitor resting on the computer case when you remove the top, center screw. Be careful not to scrape or crimp cables as you slide the cover off.

Going from cable to cable, make sure each connector is in place and tight. At the back of most computers is a row of parallel slots, some of which hold computer "cards." Rock each card forward and back (not sideways) in its slot, and make sure it is seated properly when you finish. Never, never do this when the computer is on! Some people remove the cards and clean the contacts with a

soft, non-abrasive eraser. Others argue that there is no such thing as a non-abrasive eraser and use a solvent such as those sold to clean tape recorder heads. I find that rocking the card is all that is necessary.

Before you close the lid, check the computer chips on the motherboard. After grounding yourself again, probably an unnecessary precaution, press firmly on the center of each chip in turn. Don't use excessive force if the board flexes. As the computer is turned on and off, chips heat and cool, moving fractionally in the process. After months of use, the displacement may become significant. You will not feel the chip move when you press on it, but a small squeak will tell you that you've reseated a chip. I have fixed many "broken" computers in this simple way.

SWAPPING PARTS

When a failure occurs, strip the computer bare of all peripherals and interface cards, and then see if it works. Minasi [2] tells you what to expect from an MS-DOS machine that has been stripped bare, and Brenner [1] does the same for the Apple II series. Modern computers have self-checking routines that operate when the computer is turned on or can be activitated by the key sequence. Learn how to do this with your computer before trouble occurs the first time. This is not a technique to teach the children.

If you have a problem with a bare computer, then you need no longer consider faulty components. If the bare computer is all right, follow Minasi or Brenner and add one component at a time to see if you can isolate the cause of your problem. This process can be misleading. The computer may fail, not because a bad component was added, but because the component that was added drew more power than a weak power supply could provide.

When a faulty component has been identified tentatively, confirm that conclusion by exchanging the suspicious component with the corresponding part in a second computer. If the first computer now works, but the second computer fails, you've found the source of your problem.

REPLACING POWER SUPPLIES

If a computer fails to come on, and all the power cables are in place, it is likely that the power supply has failed. Sometimes power supplies fail suddenly with an audible crack as a resistor bursts, but more often they simply become less

reliable, as evidenced by problems loading programs that work on other computers. In any case, it is easy to check and replace the power supply in an Apple II computer.

Turn off the computer, remove the lid, and ground yourself by touching the power supply. The power cord and the power switch for the computer are actually mounted on this box. Six colored wires run from the front of the box to a black connector attached to the motherboard. Squeeze this connector on the two long sides and lift it to disconnect the power supply.

It is not necessary to remove the old power supply to see if a new one is needed. Check that the switch on the new power supply is in the off position and set at the proper voltage (110 volts in the United States). Place the new power supply on the table at the rear of the computer and seat its black connector into the plug just vacated. Move the computer's power cord from the outlet on the old supply to the outlet on the new supply sitting on the table. Turn on the new power supply. If the computer works, the old power supply was defective and should be replaced. If the system still does not work, the power supply is not the problem and can be reconnected.

Children can use the computer with a new power supply resting on the table during the remainder of a day's session, but the power supply should be properly installed over night. This is not much harder than changing a light bulb. Besides the black connector and the power cable, the only things holding the old power supply to the case are four to six small screws that are easily accessed from the bottom of the computer. Unscrew them, replace the old power supply with the new one, and screw the new one in place. When the power cable and black connector are connected, the job of installing the new power supply is complete.

SHUFFLING DISK DRIVES

The disk drives for newer Apple II computers plug directly into a 9-pin socket in the back of the computer. Switching is as easy as removing the first drive and plugging in the second. It is advisable to turn the computer off before making the replacement. If this does not solve the problem, set the disk aside with a note, and connect a substitute drive. For 5.25-inch drives, wait until you have a leisure moment, open the drive case by removing the screws on the bottom, and check the inside cable connections. Used 5.25-inch drives are not expensive ($5 to $25) and do not warrant much repair.

The disk drives for older Apple II computers have connectors that plug into an interface card, usually in slot 6, under the computer lid. The oldest machines have rectangular connectors, and it is easy to mismount them offset by one pin

and/or the controller card. Look closely at the ribbon cable, and you will see that one edge is red. Pin number one connects with that edge. You will find pin numbers on the disk controller card, and you want the red edge at the low-number side of the row of pins. It is a good idea to remove the card from the computer slot, align and install the connector where you can see what you are doing, and then replace the card. The cables for the earliest disk drives had metal tabs that were clamped to the computer chassis for grounding. If you have such cables, look at their orientation before you remove them so that you can get them back into place.

Disk drives for IBM/compatibles are mounted within the case, but can usually be removed without difficulty. Draw a sketch of the metal fasteners and the cabling, so that you can get the disk back the way it came out.

Replacing internal drives on Macintosh, Laser, or Apple //c computers is not a quick and dirty operation. Seek help, if you need it.

OTHER STUFF

It is simple to replace a Koala board, Muppet Learning Keyboard, and many other input devices, by detaching the old connector from a gameport socket in the rear of the computer and attaching a new one. Read the instructions. It is common sense to turn off the computer before doing so. In any case, many devices, the Muppet board among them, will not be recognized by the computer if they were not in place when the system is booted.

FIXING KEYBOARDS

First, the bad news: removing, repairing, and replacing keyboards is a pain, replacement boards are hard to find, and used replacements aren't reliable. Replacement of individual keys is even more tedious. Now the good news: in my experience, most faulty keyboards are dirty, not broken.

Cleaning

Before you discard a keyboard, clean it! Here's how. Make sure you know the order of the keys, because they will get mixed up during cleaning. The keys are easily removed by levering up with a small flat-bladed screwdriver. Only the space bar is a little tricky. Take a good look at its underside before you slide it loose.

Drop the keys into warm water with a little detergent and leave them to soak. NOTE: Some cheaper keyboards use soluble ink. Check a key first. There

will be an astonishing amount of dirt, hair, and fuzz wound around the plastic struts where the keys used to be. A small vacuum will get most of it. Then go after the rest with tweezers or a small knife.

Wipe each key as you remove it from the detergent and dry with a soft cloth. Replace the keys by pressing them firmly. You may have to tinker a little to reinstall the space bar. Plug the computer in and try it out. You've probably fixed your computer.

Replacing

A detachable keyboard is replaced in the same way as a mouse or other peripheral: pull the old plug and insert the new one.

Replacing a built-in keyboard on an Apple II is somewhat more troublesome. Remove all peripherals from the computer and move it to a location where you can see what you are doing. Remove the lid. Invert the computer and remove the screws on the bottom around the outside edge. Separate the back of the case from the rear of the base, opening the case like a book. Connecting the two at the front is the ribbon cable for the keyboard. Make a note of the orientation of the connector to the keyboard, and remove it. Set the base aside.

The computer case and keyboard are now separate, and the keyboard is easily detached and replaced. Reassemble by reversing the previous procedure.

FIRST AID FOR FLOPPY DISKS

The care of floppy disks was discussed earlier under computer literacy. As a precaution, copy every disk you can when you receive it, store the original, and use the copy. What can be done with a failed disk? There are several things to try.

- Try the disk repeatedly on other disk drives and other computers. Should you succeed in loading it, use Copy II+ or an equivalent program to attempt a copy on that particular computer and drive.

- Use Copy II+ to bit-copy the disk and see if the copy works.

- Sometimes the square, black plastic envelope around a floppy disk is crimped, and the floppy disk cannot turn within it. Stand the square on edge and use the flat side of a pencil to flatten and widen the edge of the black envelope. Hold the disk near the top to avoid buckling it.

• If you know what you are doing, there are disks such as Salvation-Deliverance and Apple Aids that may be able to identify and correct the problem.

• Recently I received a disk that had been bent by careless mail handling and wouldn't spin within its warped envelope. I used scissors to cut carefully along the edge of the black envelope, removed the disk without touching its surface, slid the disk into an unwarped black envelope, and taped the envelope shut. There were no further problems with the disk.

• Occasionally the problem is dirt or greasy fingerprints. As a first step, turn the floppy slowly as you examine the surface for dust. Remove any you find with a photographer's brush or air spray. If the surface is too dirty for that solution, open the black envelope as described above, wash the disk in warm water with very little soap, rinse, and dry. Return the disk to its envelope (if the envelope is clean) and reseal with tape.

• I liked one program so much I bought two of them, but I neglected to make backups. By the end of computer camp, neither disk would run, although they behaved differently when booted. Assuming the errors were on different tracks, I used Copy II+ to copy tracks 1 through 11 from one disk and tracks 12 through 22 from the other. It worked, and I have two working copies again.

REFERENCES

1. Robert C. Brenner, "Apple II Plus / IIe Troubleshooting & Repair Guide," Howard W. Sams & Co., Inc, Indianapolis, 1984

2. Mark Minasi, "The Complete PC Upgrade & Maintenance Guide," Second Edition, Sybex, San Francisco, 1993

3. Nicholas A. Romano, "Master Diagnostics -- Complete Diagnostic & Maintenance Procedures for the Apple II+ Computer," Nikrom Technical Products, Shirley, MA, 1981-84 (with disk)

4. Gene B. Williams, "How to Repair and Maintain Your Apple Computer -- All II Series models, including the IIc," Chilton Book Company, Radnor, PA, 1985

Back issues of *A2-Central* (formerly *Open-Apple*), Resource-Central, are available from *Shareware Solutions II* and are very helpful in troubleshooting Apple computers. An index is available from Kula Software for $9.95.

Between trips to the bathroom and queries about "When's lunch," she crawled under and behind tables, hid in the storage lockers, and floated about the computer room, poking other children's keyboards. I pulled out the disks I use with the youngest children and set her at a computer in the corner with stern instructions to stay there. Minutes later, she was playing with a piece of paper, while two computer disks, out of their envelopes, lay on the tabletop.

Keeping disks in envelopes had been a lesson I'd emphasized that morning, but my eruption on the subject had no effect on her placid composure. "Little Girl!" I exclaimed, unkindly, "I care about these games, even if you don't." I went on and on, and she listened with no great interest until I finished, then turned back to stare at the computer screen and lazily shove its keys. "She's just not ready for computer camp," I concluded to myself. That was on Friday.

Monday morning she greeted me with a hug, and later, in the computer room, made a point of bringing me a disk that someone else had left out of its envelope. "Good for you, little girl!" I thought and thanked her. She'll do.

Identifying and Buying Supplies

It is clear that every computer camp requires computers, computer peripherals, and software, but it is possible to overlook the need for other materials in the computer room as well: blank disks, ribbons, and so forth. These, too, will be discussed in alphabetical order.

Materials may be obtained from a variety of vendors. I deal regularly with those listed below. *Computer Shopper*, incidentally, lists suppliers in every issue, along with their phone numbers, addresses, hours of operation, and other data. Those using IBM/compatible systems, especially, should consult this list.

VENDORS

There are many vendors and the alphabetical list that follows is incomplete. You are advised to try several and then stick with those that suit you best.

Bale Company, 222 Public Street, Box 6400, Providence, RI 02940-6400; 1-800-822-5350 (orders); 1-401-331-1666; 1-401-831-5500 (FAX). Bale supplies pins, medallions, certificates, ribbons, and other materials for awards. They have a wide selection, and many items are available with computer-related labels. The additional cost for pins with enamelled color is worth the expense. For prompt service, order before April or after June to avoid the school rush.

Computer Friends, Inc., 14250 N. W. Science Park Drive, Portland, OR 97229; 1-800-547-3303 (orders); 1-503-626-2291 (service); 1-503-643-5379 (FAX). Computer Friends provide printer support products such as ribbon-inking machines, new ribbons, cartridges and inserts, toner supplies, printer ink, and units to refill ink cartridges. Write or call them to receive a descriptive product listing by return mail.

Creative Solutions, Box 340850, Beavercreek, OH 45434; 1-513-429-5759. My price list from Creative Solutions includes printer ink, reinking devices, and floppy disks. I have not used their services.

Edmund Scientific Co., 101 East Gloucester Pike, Barrington, NJ 08007-1380; 1-609-547-8880; 1-609-573-6295 (FAX). Edmund Scientific is not a computer supply house, but they have an astonishing collection of technical and scientific items with which to enrich or supplement what is done in the computer room or to hand out as attendance awards.

The Highsmith Co., Inc., W5527 Highway 106, P.O. Box 800, Fort Atkinson, WI 53538-0800; 1-800-558-2110 (sales); 1-800-558-3899 (service); 1-800-835-2329 (FAX). In addition to computer supplies, Highsmith sells audio-visual equipment, office supplies, and furniture. Their computer support includes overhead projector plates, security cables, outlets and surge protectors, printer stands, covers for computers or keyboards, disk files, disks, ribbons, and paper. They don't offer significant discounts, but they have provided me with excellent service.

K-Mart (local listing). There is not much in K-mart for the computer room, but I go there frequently for recreation equipment, office supples, craft materials, and attendance prizes.

MEI/Micro Center, 1100 Steelwood Road, Columbus, OH 43212; 1-800-634-3478 (orders); 1-614-481-4417 (service); 1-614-486-6417 (FAX). It is a rare advertisement from the MEI/Micro Center that does not feature bargain prices for floppy disks, especially in volume lots. Buy a box of ten floppies anywhere you like, but give MEI/Micro a call before you buy two hundred disks for a computer camp. They also list software and peripherals. They have a wide selection of ribbons, and they provide prompt service, but they charge $3.25 to process your order and, get this, $1.75 **per ribbon pack** for shipping. Yes, they do pack the ribbons well.

Office Depot (local listing). The nearest Office Depot store is a two-hour drive from my computer camp, but I go there once a summer to buy bulk supplies of computer paper and printer ribbons, and to look for discounted boxes of floppy disks. They also stock heavy-duty folding tables, charging less than $30 for a 30-inch by 60-inch model you can stand on. I had three in my 1997 computer room. It's an expensive place to browse: too much useful stuff!

Nite Owl Products, 5734 Lamar Lane, Mission, KS 66202. Source for replacement batteries for Apple IIGS, ROM 01 motherboards.

Radio Shack (local listing). One may save a little more ordering through the mail, but Radio Shack's convenient locations justify my regular visits for such items as computer disks and boxes, multiple outlets with surge protection, cables, and printer stands. Those with Tandy or other MS-DOS computers will find computer supplies, as well.

Redmond Cable, 1-206-882-2009. You can buy cables at many places if you know exactly what you want, but if you are unsure about the specifications and want your hand held a little, call Redmond for exactly the right high-quality cable.

Wal-Mart (local listing). Wal-Mart's electronics department offers computers, software, cables, blank disks, and a few peripherals, but my weekly visits in the summer to Wal-Mart are for craft materials, attendance prizes, office supplies, and computer paper.

AUDIOVISUAL SUPPLIES

One can operate a computer camp without audiovisual supplies, but they can be extremely helpful, especially on rainy days.

Chalkboard

If your computer camp is operating out of a public school, there's an excellent chance there will be a chalkboard in the room. I am a typical college professor, and I prefer to speak to groups with chalk in my hand. Just the same, after I write the standard camp schedule on the board at the front of the room, and bring in the computers, I put the chalk and erasers away for the summer. I may live and flourish in a cloud of white dust, but computer peripherals and floppy disks choke and die in a dusty atmosphere. If you use chalk in the crafts room, don't let the kids bring it near the computers. Markerboards are fine, if you can afford the markers.

Overhead Projector

It is very expensive to show a colored computer screen using an overhead projector, and there aren't many other uses for one at a computer camp. Still, if you operate in a school or church, an overhead projector should be available. An amusing craft project is to project a child's outline on to a large piece of paper and then copy it with markers or tempera. You can't use more than two children, because shadows are a problem.

Radio, CD Player, or Tape Recorder

You won't get appropriate program activities from commercial radio broadcasts, but you may wish to have a radio on during an activity like crafts. The computer room does not need any additional sound. In some settings, a radio will draw complaints from other people in the building. If no one else is bothered by music, I favor a CD player or tape recorder over a radio. If you use one, lock it up. If you let children bring in music, have a mechanism to keep track of it

when the children aren't in the room. Several years ago my crafts instructor instituted a Talent Show for the next to the last day of camp. The kids lip-sync, mostly, and have a lot of fun with prizes for everyone.

Slide Projector

A sponsor-supported activity, such as drug awareness, may use a slide projector, but most now use VCR's. You will not need a slide projector for a computer room, crafts, or recreation, although it is fun to hang a sheet on a clothesline, put kids behind the sheet, the projector behind the kids, and enact shadow plays

TV or VCR

Please don't park the kids in front of a TV set. They do that at home. They are voracious consumers of VCR tapes, and the only ones they haven't seen are the ones not worth showing. We restrict VCR use at camp to recreation periods during long wet days. A camp running with one instructor can try splitting the camp with a VCR and TV at one end of the room and computers at the other.

FOR THE COMPUTER ROOM

Batteries

Does one of your computers have trouble remembering the time and date? It may have a dead battery. All versions of the Apple IIGS, the ROM 00, ROM 01, and ROM 03, have a battery on the motherboard that runs a real-time clock for the computer and allows it to remember dozens of control panel settings, such as the location of the boot drive and the size of a RAM disk. The battery that comes with the computer has a presumed life of about ten years, but some computers are ten years old, and others have batteries that don't live up to expectations. It is my advice that you have one just for the peace of mind it provides. I get mine from Nite Owl Products for $15 plus shipping. The old battery is soldered in place, but no soldering is required for the replacement. One simply cuts the wires to the old battery and slips the new battery into place on the cut ends of the old one. It's easy, believe me! IBM systems also have batteries, which ordinarily outlive their short lived motherboards. Swapping them isn't difficult, but requires a soldering iron. An Apple dealer will replace the Mac's motherboard battery at no charge.

Disk Boxes

Like coat hangers left unwatched in a closet, floppy disks breed. If you operate a computer camp for long, your disks will number into the hundreds, and keeping track of them will become a chore. I conserve some space by keeping disks in their envelopes rather than the boxes in which they are sold. You will still need enough boxes to hold your disks, and I advise that you to fill your boxes only about two-thirds full, so that you have a place to put newer disks as you acquire them. When you buy a new disk box, by the way, don't throw away the cardboard box it comes in. This cardboard box is an excellent storage container for backup disks or older disks that sit on a shelf most of the time. Don't discard, either, the boxes in which your floppy disks arrive. At the back of each 3.5-inch disk box, I cut a tab that stands up when the box is closed, and I label these tabs. Then I put these boxes into another cardboard box or tray. This sorts my 3.5-inch disks and costs me nothing. As described under room layout, I also color-code my floppies for faster sorting.

I do use sturdy plastic disk boxes in my computer room. There are three boxes for 5.25-inch disks. One, the largest, holds educational disks. Its lid lifts off entirely, and I lay the lid on the tabletop as a tray for children to put disks in when they return them. Do not ask or expect kids to replace disks in the correct boxes. Another full-size disk box holds "adventure" disks, and the smallest holds entertainment disks. The disks I use for camp administration are in other boxes out of sight! The 3.5-inch camp disks are in five boxes, one for system disks and **CampMaster**, a big one for education, one for "adventures," one for saved games, and one for fun. CD-ROM disks can be shelved in their own containers. When I had many computers using only 5.25" drives, each child had a personal disk with the 5.25" version of **CampMaster**.

Floppy Disks

In addition to the software disks that carry computer programs, blank disks will be required as well. I use such disks to back up programs and to prepare the individual disks given to each camper. Campers use blank disks to save games, graphic images, and things they have written with word processors. When using 5.25" drives, I recommend combining these uses when possible. The individual disks issued to campers can often be used by them to save their games and files. When a specialized format is used for saved work, then I place a blank disk with the appropriate format in the same envelope with the software that uses it.

Size. An antique collector may come across an eight-inch floppy disk, but programs sold today use either a 5.25 or 3.5-inch format with the former becoming rare. All of my computers have 5.25-inch drives, and my Apple IIGS computers have 3.5-inch drives. Macintosh systems operate with 3.5-inch drives. IBM/compatibles, like Apple II systems, use 5.25-inch drives in older machines and 3.5-inch drives in newer ones. The newest machines have CD-ROM drives.

Density. The density and grain-size of the storage media determines whether a disk is single density (SD), double density (DD), or high density (HS). Single density disks are no longer used, and double density disks are becoming harder to find. The newer a system, of whatever kind, the higher the probability that it will require high density disks. Although it is possible to store information on a high-density disk using a double density drive, it is not recommended. The reverse is not possible.

Certification. If only one side of the disk has been examined and certified, the disk is single sided (SS), whereas the disk is double sided (DS) if both sides have been certified. Recently I received several boxes of single sided disks and found that, as certified, only one side could be formatted; however, the manufacturing process is the same for both sides of single-sided disks, so most single-sided disks are usable, though uncertified, on both sides. If you are purchasing new disks the difference is academic. Single-sided disks are no longer advertised.

Format. Not uncommonly I am using a program and need a formatted disk to store information or to save my work. Many programs do not allow you to format a disk while the program is in use. Wise users format disks ahead of time and keep them handy for such occasions. If your system is an IBM/compatible or Macintosh, you may like the convenience of having disks formatted when you purchase them, but this adds a dollar or so to the cost for a pack of ten. Pre-formatted disks are becoming the standard configuration.

Buy enough disks so that you can back up all your software. Newer disks are made to be transferred to hard disks, so they are less apt to have copy protection. Put the original out of sight and let the children play with the backup. Don't violate copyright laws by making more than one copy of a disk or by putting a program on more than one hard disk without a site license. You are teaching the children. Teach them ethical behavior by your own example.

Backups of older, copy-protected disks can often be accomplished using utilities such as Copy II Plus. This excellent utility works well with older Apple

programs, but Copy II Plus does not understand the GS/OS operating system used by the Apple IIGS. Don't use Copy II Plus with the hard disk on an Apple IIGS or you may damage its files. There is no problem as long as you copy a disk in one floppy drive to a disk in the same or another floppy drive.

When you copy a disk, you may wish to make an attractive label for the copy. An Apple IIGS can do this with GDL, Triad Ventures' Graphical Disk Labeller. Of course, you can do it yourself using colored markers.

Labels

Although floppy disks are sold with labels, you will need many more. I used to issue one disk to each child at the beginning of camp, and the children wrote their names on these with markers. All of these labels are replaced for each new camp. It is not uncommon to erase one disk and use it for another purpose. Buy a couple hundred sticky backed labels. You won't regret it. Try to get the labels in different colors to help when you are sorting disks.

Markers

I place a washable marker at each computer. Don't substitute a pencil or a ball-point pen, because the marker will be used on floppy disk labels, where a hard point can damage the disk. Kids playing games like those in the Carmen Sandiego series can be pursuaded to take notes! I use the marker, also. Hardware stores sell plastic clips with sticky backs that attach to smooth surfaces. I place one of these on top of each computer monitor at the rear. Then I put a couple slips of paper in each clip. As often as a program won't load or a joystick won't work -- anything that can't be fixed on the spot -- I write myself a note there, and I like to have a marker handy. A marker can also be used to write instructions on the computer case. For example, there are a number of programs that use the keyboard to move a cursor: I is up, K is right, J is left, and M is down. Kids won't remember that from day to day, so you write it on the case. The computer I am using at this instant has an "open-Apple" key, which is called a "Command" key by some software. No problem: the word "Command" is written on the case under the key. I could go on, but I won't. Put a new marker with each computer at the start of every computer camp, and then check daily. They aren't often taken, but they do end up under the tables.

Transparent Shelf Paper

Rubbermaid, among other manufacturers, makes a transparent, adhesive shelf paper that is available at stores like K-Mart and Wal-Mart. Buy a roll. Cut it to size, and use it to laminate the one-page instruction sheets that come with some software, to cover log-on instructions attached to your computers, to prepare lesson handouts, or to protect floppy disk labels, among other uses.

PRINTER SUPPLIES

Ink and Ink Cartridges

I use dot matrix printers, because I operate on a shoestring, and all I know about ink-jet printers is what I read. You can reuse a worn ribbon, but when you are out of ink, you are out of ink. Refilling a cartridge requires a little experience, and you must pay up front for a device to do it; however, the savings are worth both the time it takes to learn and the cost of the kit.

Paper

You will need paper for administration and for craft activities, but here I am writing about computer paper. I buy good quality fanfold paper, premium white bond, 20-pound, with "microperforated" margins. I get it in 2200-sheet boxes at a discount house such as Wal-Mart. I also buy one five-color package of fan-fold paper and install one of the color packs on one of the printers at the beginning of a camp. When the colored paper is gone, I don't replace it until the next camp begins. Recycled paper is available, also. If you buy recycled paper, it is only consistent to recycle your own.

Printer ribbons

During computer camp, I have two to three dot matrix printers running almost continuously. I have allowed ribbons to become very faint without replacing them, but I will preach what I don't practice and suggest a new ribbon every two weeks. I used to recommend that you stick to black ribbons and have children use markers when they want colored pictures; however, the graphic capabilities of newer computers deserve color output. Buy good ribbons. Fabric ribbons last longer and are worth the additional cost. Cheap ribbons twist and

jam before they are used up. Buy in quantity. What you don't use them this year, you will use next. If you do splurge on color ribbons, use them for color printing only or the black band will wear out before the other colors do. Printers come in a bewildering variety of makes and models. Make sure of the model before you shop, or you'll get the wrong ribbon.

A significant amount of money can be saved by reinking ribbons, a topic I discuss under maintenance. Keep ribbons in a sealed container or the ink will dry out. I use the plastic bag that my newspaper arrives in, but refrigerator bags or boxes work well for this purpose.

Toner / Laser Cartridges

I will make the bad assumption that a camp that can afford laser printers can also afford new cartridges. If I am mistaken, what I said about ink cartridges can be repeated for toner, but a higher level of expertise is needed. Have fun and wash your hands when you finish (if you can). An alternative is to buy refilled cartridges, which are not much inferior and not much cheaper than originals.

HANDOUTS

Some supplies are used to run the computer camp, but here are some things to consider giving to the children.

Awards

The children should receive something to take home on the last day. At my third, fourth and fifth computer camps, I gave each child that attended regularly a nice pin with a label like "Computer Literacy" with an enamelled background (blue, red, green, purple) to show the level of achievement. After giving bronze the first year, I went to silver the second, and gold the third. My enrollment kept increasing, and I ran out of metals for awards and money simultaneously. The kids liked their pins, by and large, but there was always someone crying because he or she didn't get the color they thought they deserved. On the other hand, even those who cried would show me the pin months later if they happened to see me. My crafts instructor still has the one she earned ten years ago. I bought my pins from the Bale Company, who gave excellent service. They also provide ribbons and certificates.

With too many children for pins at four to five dollars each, I changed my award philosophy. I still keep track of points earned by attendance, completing

lessons, and using educational software, but now I simply rank the children, and send them in that order to choose their own awards from a table full on the last day of camp. For these awards I use the sort of thing that one sees in stores hanging on cardboard under a plastic bubble and selling for less (frequently much less) than three dollars such as balls, coloring books, jump ropes, water pistols, cars, flowery writing paper, kites, and fishing bobbins. There are always twenty more choices than there are children, and no one has cried yet. I try to buy things that won't be broken before the kids get them home, but I don't always succeed. What breaks on the spot, I replace.

One year a sponsor bought 150 painter's caps inscribed with the words "Buckhorn Computer Camp" and we gave one to everyone. Tee-shirts would be better, but more expensive. The nice thing about caps is that one size fits all. I have also considered, but not yet given, plastic buttons like those used in political campaigns.

Other Things to Give Away

Food. At our camps the children receive a snack on arrival and a hot lunch. If you can't manage that, mix up Koolaid and ask some mothers to bake cookies. In economically deprived areas, a computer camp lunch may be the best meal the child sees all day. Having a parent provide snacks is a way to involve parents, too.

Newsletter. At my first camp we used the computers to put out a camp newsletter on the last day. The children wrote contributions that were filled out by materials from the staff. When I began writing news releases about awards the night before the last day, I stopped producing the newsletter; however, you should consider it.

Notebook. My own computer is surrounded by paper, and six 3-inch notebooks stand on the table within reach. I have tried giving the children notebooks and clipboards to get them to take notes and save their work, but I have never been successful. Some programs, like Tom Snyder's **Snooper Troops**, come with their own notebooks, but these get discarded after their first use. Unless the camp has a theme, like drug prevention, and notebooks are used every day, in and out of the computer room, I don't think children will keep track of them and use them.

Permission Forms. You will need something to leave with the parents describing camp policies and schedules, and you will need something to get back

from them with vital statistics, phone numbers, medical information, and a permission signature. I use one piece of paper, printed on both sides, with a tear off line. Your lawyers may insist you tell them more and get more back. The form I use will be found elsewhere.

RECREATION AND CRAFTS SUPPLIES

Craft Materials

There are other sections of this book with specific recommendations for craft supplies and their vendors. It is not necessary that a computer camp have an arts and crafts program, but children need something to do when they are not in the computer room, and these are activities the children and I enjoy.

Recreation Equipment

After sitting an hour at the computer, small children, especially, need some large muscle activity: recreation. A skilled recreation director can keep them happy for an hour without equipment, but an unskilled volunteer will need balls, nets, and a tin whistle. Look elsewhere for my specific suggestions.

Notebook. After trials with things like clipboards, I decided that I could run the camp better with a 1-1/2" thick three-ring notebook with ten or more dividers. Notebooks with transparent covers will let you place the current list of children under one cover and the day's schedule under the other. You'll need an inch of lined paper, or at least I do. Look under camp administration for how I organize my notebook.

She was a young, flaxen-haired teenager my first summer in Kentucky. She grew up, married, was widowed, and married again. Her daughter, my first "second generation" camper, was having problems, and the mother expressed her concerns. "I'm not complaining," she explained, "just communicating."

"First of all," she said, "she says that snacks aren't distributed fairly." Since the prices are fixed, that meant that either the daughter was having to wait while others were served, or we were running out of what she wanted. We can't stock everything, and someone has to be served last, but I told the mother we'd try harder to let the kids know who was served first and why.

"Second," she went on, "there's too much pressure on the children. They're afraid they'll damage the computer or the disks." Since they frequently do, I didn't promise to cut back our emphasis on proper computer procedures.

"Third," said she, "she has a problem with another girl, who is pushy and interfering." She named the other girl, who was no shrinking violet. It seemed to me that her daughter could give as well as she got, but I promised to monitor the situation.

Lastly, she told me, her daughter couldn't get a partner. I don't assign partners. Children choose their own. There wasn't a lot I could do, and I said so.

"I wasn't complaining," she repeated, "just communicating." Her daughter is now too old for camp, but her younger brother is attending, and the baby will be coming soon. We still communicate.

DEALING WITH KIDS

Groups: Divide and Conquer!

Having discussed the grouping of children when I considered schedules, I will not repeat myself here more than is necessary.

I observed elsewhere that it is unnecessary to have homogeneous groups in the computer room, because computer interactions are basically one on one. Even a child needing a partner will probably choose one who would be in the same group whatever criterion I adopted. If the children in the computer room differ in age, ability, or interests, it only means that they will be asking for different computer disks, and a limited supply will be used more efficiently. Unfortunately, when the children leave the computer room, homogenity becomes far more important, so I group my children for the convenience of the counselors who teach crafts and recreation.

The first criterion for grouping is maturity. Physical maturity implies increasing strength, agility, and coordination. Mental and emotional maturity incorporates intelligence, social skills, attention span, self-image, and responsibility. The two types of skills go together, but they do not coincide. Age correlates well with physical maturity and school grade with emotional maturity, but again the classes do not coincide.

Having tried other criteria, I group by age. The age grouping works best in recreation, which is also the least structured part of the program, and works as well as other groupings in the crafts room. One significant advantage of age as a criterion is that children understand the criterion. Children have argued that I should draw a line at 10 years old, rather than 11 years old, but no child has ever challenged the notion that age should be used.

If you have a school background you may prefer to group by grade, and that grouping may work best for you. For consistancy, grade should then be used to determine camp eligibility. I take children from 7 to 12 years old. A grade-based camp might take children entering the 2nd through the 7th grades. Grade is a little vague during the summer. Those who have been retained will tend to seek out the familiar classmates of the previous year rather than the younger

classmates of the year to come. An alternative to the above is to accept those who have been enrolled in the 1st through the 6th grades. Dealing with these factors is no harder than dealing with children whose age changes during the summer months.

I look at gender in passing, simply because groups do not work well if the number of boys far exceeds the number of girls, or vice versa. In most cases I can avoid this by moving the minimum and maximum age limits to slip in or exclude a child or two, but occasionally I bite the bullet and achieve more balance by including an extra boy or girl whose age is not quite correct. The ratio of boys to girls is not as important as the absolute number of children in the minority. Four or five girls, for example, can form a happy group in a crowd of twelve boys, but two or three of one sex are too few, especially if they don't get along, or one is absent. Gender is something to look at, but not something of concern.

My camps in eastern Kentucky have very few children from minority groups. A black family in an Appalachian hollow may not like their cultural isolation, but it has become familiar. For three years I had two brothers who assisted their own situation by inviting a cousin to stay with them for the two weeks that all three attended computer camp. I welcome such arrangements, but I don't initiate them. My staff includes teenaged assistants, and twice those teens have been black.

Children with emotional or physical handicaps attend with other children their own age. The camp has welcomed children who are deaf or legally blind, children in orthopedic braces or a wheelchair, children institutionalized for emotional disturbances, and a mute autistic. Except for the last, they simply do not require special planning beyond a recognition that they will be more challenged than other children by certain activities. I did hire aides to assist the autistic boy, when he was younger, and a girl in a wheelchair, both of whom the children treated differently, but not unkindly. If anything, they were too protective.

For a time one year I thought that I would have to transport all my children with only a single van. Since it takes as much as an hour to bring certain children to the school, making more than one van run would have necessitated starting camp before the arrival of the second van, and sending the early arrivals home before those who were transported later. Should that have happened, I would have been forced to group children by the van they ride in, and I believe that would not work as well outside the computer room as grouping by grade or age.

There are situations, such as child care during meetings of a parent-teacher group, when a single, diverse group would be expected and the ease of handling the group welcomed; however, those computer room situations are the exception.

With larger groups another situation is possible. Suppose a camp were organized by a YMCA with an emphasis on use of a swimming pool. In that case, children might be grouped by gender and swimming ability. The point I wish to make is that although sponsor objectives can influence groupings, very diverse groups can make effective use of the computer room.

Although I have been running computer camps in Perry County, Kentucky, for ten years, I also conducted one camp in Wolfe County, fifty miles to the north. That handicapped me a little, because, for the first time in years, I didn't know the children or their parents.

The ten-year-old wasn't enthusiastic about coming to camp, and the third day he came, not on the bus, but with his mother. She was polite, but firm. "I want to know what happened yesterday," she said.

I didn't know "_what happened yesterday_" and asked for an explanation. She told me that her son had been threatened after lunch on the playground by some bigger boys. I turned to him and asked some questions. He told me the boys weren't from the camp, and they had come down the hill into the playground from its upper edge while the adults were on the lower side with the younger children. That struck me as odd, because the upper edge of the playground ended in trees, bushes, and a chainlink fence abutting an expressway, but I promised to look into the matter and supervise the playground more closely. She left, and the boy stayed.

I questioned him again on the playground after lunch, trying to get a better idea who the the bigger boys were and how they had gotten on to the playground. He couldn't help much.

He came to me in the morning, a day or two later. "Those boys I told you about_" he said. "I was just a-blowin'."

"Thanks for telling me," I said. "I appreciate it. Does your mother know?" He nodded, and I took him at his word. I don't know whether he had grown to like computer camp, begun to trust me, or just didn't want to live any longer with the story he had told.

A Group at a Single Computer

When reviewing the Sword Thrust adventure series and when discussing scheduling of activities, I mentioned the possibility of collecting a group of campers at a single computer to allow the remaining computers to be used by single students or children in pairs. I would like to discuss the mechanics of the group arrangement.

If children must use the computer as a group at one time during the day, they will feel cheated seeing others with a computer to themselves unless they understand that the situation will be reversed later. The alternation between group use and personal use needs to be explained to everyone the first day and to individuals who begin camp at a later time.

Do not expect children to function as a group without supervision. When I used group activities in my second computer camp, a teenaged assistant was assigned to the group permanently to lead the activity, act excited, and maintain interest. The teenager needs to know the game well, but he or she should be soliciting opinions and taking votes, not making decisions.

Isolate the group. If you can, place it in a room by itself. If a separate room is unavailable, locate a long table at one end of the common room, put the computer at one end of the table with its back to the wall, and seat the children along the long sides of the table so that they will not be seeing the other computers while they are watching their own. I put a bookcase between this long table and the rest of the room.

There are at least three ways for children to use a computer as a group:

- They can work with a program that calls upon the user for decisions and respond to the program by consensus.

- They can use a program with software that addresses the members of the group as individuals.

- They can use a computer that has hardware with a button for everyone.

PLAYING BY CONSENSUS

Reserve one of the best programs for use by the group, and allow its use only during the group activity. When I had a limited number of computers in 1985, I used Don Brown's **Sword Thrust**. Today I would use **King's Quest II** or **King's Quest III**. The September/October 1993 issue of *II Alive* describes the use of single computers in a classroom setting. Jeffrey Damerst gives specific instructions for third graders in "Critical Thinking Skills: Sierra's **Gold Rush**," and Art Tibbets tells how to connect the computer through a VCR in "One Computer in the Classroom."

In any event, choose a game that does not depend upon manual dexterity and allows children as long as they need between moves to make decisions. There is no harm in having two or more groups working on the same game and talking about it outside the computer room.

Most children have trouble using maps, much less creating them, so I have maps ready made before the activity begins. Each map needs to be large enough so that all eight children can see it clearly from their seats. I spread the current map in the middle of the table and place game pieces on it to mark the room occupied by the adventurers in the game. Have a small box with characters in it for each group. When you find something in a room such as a treasure or a monster, have a child make a small drawing to represent it, and put it in its proper place on the map. They may want to take this on as a project during their crafts time. It is also a good idea to have a sheet of paper with the inventory on it.

Save the game repeatedly so that you will not have far to back up when your hero is killed. Tell your teenager to let the children take chances and not worry when they goof. Don't worry if one group gets more points than another. The group that is behind will catch up rapidly, because the kids in the group that is leading can be depended upon to boast about how they solved their riddles. It is much easier to catch up than to forge ahead.

Try to finish the game before the last day. As you get closer to the end, the teenager's hints can get broader and broader.

Keep a chart of who sits where, and rotate who sits next to the computer from day to day. Assign children to perform specific tasks: maintaining the inventory, moving the games pieces, providing sound effects, typing in

instructions, drawing treasures, and so forth. Children may have permanent assignments, or the assignments can remain with the seats as the children move.

Keep the children in the group away from the rest of the computer room. It is less disruptive when kids who work at individual computers come by to see how the group is doing. If one group is way ahead of the other, allow a volunteer from the leading group to join the group that is behind. Don't use the same expert every day.

You can tell your teenager how to beat the game, but like the littler kids, your aide will enjoy the game more by making his or her own decisions. My computer room assistants have often preferred to stay in the computer room over the lunch break, and I encourage this. I don't pay them for their lunch time, and the decision is theirs. It is the teenager's enthusiasm that will make or break the group activity. Anything you can do to make it more fun for them will benfit the whole camp.

GROUPWARE

Several years ago I wrote a program called **Detectives** that used this principle. The names of the children are entered into the computer at the beginning. Thereafter, whenever a decision is to be made, the computer chooses one student at random to reply. Should the child prefer not to answer, then the decision is reached by consensus. When names are entered, I always include a child named "Anyone." So long as only the original children are present, Anyone's questions are answered by the first child to respond, but should a latecomer arrive, he or she answers Anyone's questions.

The problem with this approach is that it requires software prepared with a group in mind. There is a lot of software for two players, and some for three, but comparatively little for groups. Tom Snyder Productions lists some groupware in their catalog. Write them at 80 Coolidge Hill Road, Watertown, MA 02171-2817 or call 1-800-342-0236.

You don't have to have special software to use this approach. You can use the set up described above if you provide a spinner with each child's name. The spinner, rather than the computer, will decide whose turn it is to respond.

GIVE THE KID A BUTTON!

Here's a market waiting for a product. I have a prototype that works after a fashion, but it requires calibration every time you use it. The idea is to furnish

each child with a button that adds a specific resistance through the joystick port. If each resistance is twice that of the previous button, then simple binary arithmetic can determine from the total resistance which, and how many, buttons are pressed.

For example, suppose the resistances are 1, 2, 4, 8, 16, 32, and 64 thousand ohms. A total resistance of 28 thousand ohms is possible only if the third, fourth, and fifth buttons are pressed. Since computers that respond to analog inputs, such as the Apple and IBM, have not one, but four inputs for variable resistance, far more reliability is attained by using two buttons per circuit using, say, 40 and 80 thousand ohms for each. It is much easier to detect a button push of 120 thousand ohms plus or minus 20 thousand ohms than 28 thousand ohms plus or minus 500 ohms. Neither the Apple nor the IBM machine offer 500-ohm precision through their joystick ports. Another alternative would be two resistances per child per circuit, 10, 20, 40, and 80 thousand ohms, say. In that case the hardware could be written so each child had either two buttons to push or a double throw single pull switch that could be moved in two different directions.

No one is selling hardware like this yet, but I predict they will, someday.

Getting Through the Day

PREPARATION

Although the first event of the day may be a van departure for a distant home, I will be looking in this section at the camp site.

Entering the building may be easy or very complicated, depending upon who is authorized to carry keys and open doors. It is not uncommon for a custodian to open the outside doors, while someone from the camp unlocks doors used for camp activities. In any event, the doors need to be opened, and a camp counselor needs to be at the site before the first child arrives. Even if an official starting time is announced to parents, older children who live nearby may arrive unattended and early.

ARRIVAL OF CHILDREN

If an adult is present, and there is an adequate play area, a formal program is not needed while children are arriving. We simply have an unstructured recess. Sponsors may prefer to gather the first arrivals for a general meeting with singing or other opening exercises. In such cases, active leadership is needed. Do not expect children to sit quietly in rows while adults rush about getting ready for the day.

See to it that arriving vans do not drive through children milling about on a parking lot and that the children in the vans are in seats and seatbelts until the vehicle reaches its destination. That will require discipline inside the van and a junior counselor, at least, on site as the van arrives.

SNACK AND ANNOUNCEMENTS

My children receive a snack at the beginning of the day. When we had a room that opened on to the playground, we gathered the children inside the room and gave them snacks as they went outside. With an interior room, we let them eat inside. If you do not use a lunchroom, you will need a new, large trash bag every day. Make sure children know what to do with unwanted milk or juices or you will have a smelly mess outside the door or inside the garbage can.

Should your sponsor desire an invocation or other formal opening, the gathering before the snack is a convenient time to do it. It is also the time to tell the children about the day's activities. It is a waste of time to give them a message to their parents this early in the day.

On the first day, during the snack period, introduce yourself and other counselors and assign the children to their groups. Sorting should be done before the children arrive, if possible, to minimize on-site adjustments. I avoid age or grade designations such as "10-year-olds" or "3rd graders." Instead, I use colors: the blue group, the green group, the orange group, and the red group. You may prefer animals, such as owls, wolves, wildcats, or bears. Any names that do not suggest the superiority of one group over another are acceptable.

You will be asked to make exceptions so that friends can be together. I advise saying "No" on the first day, but giving it consideration later if a child is seriously unhappy and the request is repeated.

As indicated in the section under scheduling, I take two groups of children into the computer room, while a third group goes to crafts and the fourth to recreation. Leaving crafts and recreation for the moment, let's follow the first two groups into the computer room.

STARTING UP THE COMPUTERS

I have a teenaged assistant for the computer room who turns on the lights and the air-conditioner, plugs in the computer power cords, checks that there is paper in the printers and a marker at every computer, sets out the disks that will be used for the morning lesson, and, often, boots the computers. Computers like the Apple IIGS operate at more than one speed, and the aide assures that the fastest speed is in use. One summer a computer monitor had a blurred display until it has been on a while, so that was turned on by the first person to arrive in the room. If you don't have an assistant, do these things yourself before the children arrive or while they snack.

As the children enter the room, especially on the first day, they will run to sit at a computer. There is no problem with this in a school setting where the computers are identical and there are enough to go around. My computers are not identical, and usually there are more children than computers, so I must make assignments. The trick is to do this quickly and fairly. Here is the procedure that works for me.

Have in hand a list of the children in the room. The list should not be alphabetical, and it should not be ranked by age or grade. I will explain why later.

While the children are still seated, explain important differences in your computers. Don't use technical language, and don't bother with differences that

aren't obvious. I tell kids which computers don't have color monitors and which ". . .will let them print things to take home." If there is a computer without a joystick, the kids need to know it. If one computer is much faster than others, that is worth mentioning. Until last year I had to add something like: "The only computers that will run the programs on these small disks (holding one up) are the six in a row over there."

Explain that since there are more children than computers, some children will be working with a partner. Add that children with partners will be allowed to choose their computer before children that don't want a partner. If too many people do not choose partners, the teacher will choose partners for them.

Ask the children to stand in the center of the room and find a partner. Tell them that if they stay seated, the one computer they will not be assigned is the one in front of them.

When the children are standing, most with partners, explain that you are about to call names. When a name is called, the child and his or her partner may choose a computer and sit there. If a child does not have a partner, he or she is to say "No partner!" and wait until persons with partners are seated. Add that the list is changed every time they come in the computer room, so that sooner or later everyone will have a chance to go first.

Call the first name on your list, and ask if there is a partner. If there is, have them choose a computer. If they hesitate, suggest one of the "better" computers. As the children are seated, place a dot next to their names, so you won't call on them again. If the child has no partner, promise to call his or her name again in a few minutes. Go on to the next name and repeat the procedure.

When all the children with partners have been seated, go back to the top of the list and call the names in turn of children without partners. It will help you later if the dot you place next to these names is different from the dot for children with partners. I use solid dots and small open circles. The process takes less time than it takes to describe and goes faster after the first day, especially if children have attended the camp in previous years.

There are a number of computer games that work well with partners, and many children prefer to share their computer with a friend. As a result, I rarely have to assign partners. When that happens, this is what I do. After all the computers are assigned, I turn to the next child in line and say, "Lee, of the computers where there is only one person, which would you prefer?" Lee points to where Pat is sitting. Then I say, "Pat, Lee is going to be sitting there. Would

you rather have Lee as a partner, or would you rather choose another computer?" Lee's choice was probably of Pat rather than Pat's computer, and often they agree to be partners. If not, Lee sits, Pat rises, and the procedure is repeated with Pat. It works, but it is rarely necessary.

By now there is a dot next to every name on the list, and I am ready for the day's lesson. My aide and I distribute disks for the lesson. Most lessons use CampMaster, a graphics program, or a Logo disk. I color code the disks so I can find them easily. I have two Logo disks to use on my 64K computer; otherwise, it does not matter who gets which Logo disk. In any case, the disks are distributed quickly.

The lesson itself has been described under Computer Literacy. When the lesson is over, I go back to the list, beginning at the bottom so that partners who were the last to be assigned computers will be the first to be assigned software. Calling the last name, I tell that person and his or her partner to bring the lesson disk back and place it in a tray on the table, after which he or she may select an educational disk to use for the remainder of the period. While they are doing this, I go up the list to the next partners. Here is where you will appreciate the convenience of having a different type of dot to identify the children working in pairs.

I let up to six children (three pairs) congregate around the disk box at a time. The aide assists them with their choices (or the aide calls names, and I do the helping). If children delay too long at the box, I go on to the next name; however, it is not a race. If two children want the same disk, it goes to the person whose name (or whose partner's name) was called first, not to the child who was first to find the disk. The rule works. Kids don't run or push, disks aren't damaged by hurried handling, and a child cannot hide a disk as a way of reserving it. All squabbles over computers or disks are resolved by looking at the list.

When children with partners have selected their disks, children without partners may come to get theirs, again in reverse order from the assignment of computers.

At the end of the period, move the top name to the bottom of the list, so the child will not have first choice in computers twice in the same day. The other names are moved up. I do this mentally, not physically. When the children return in the afternoon, I begin with the second name, not the first; however, I do prepare a new list after camp is over for the day.

When a child is absent I move the name up the list with the others, but I don't move the name from the top to the bottom until the child is present to make his or her first choice. Children don't remember the order, but they will remember that they were never first.

KEEPING UP THE ACTION

Earlier I recommended that names be listed in random order. Two children of the same age are apt to be friends and partners. If the list is not random, their similar ages will cause their names to be close together. Partners benefit from having their names separated on the list, because if one name isn't called early, the other may be. The children aren't sophisticated enough to appreciate the benefit of partner's names being separated, but the child whose name heads the list is frequently asked to be a partner.

You will need to handle separations of partners when children can't get along, often because one hogs the computer or joystick. If no computer is available, either may seek a new partner, or they must live with each other. If it is late in the period and there is an unused computer (usually a "less desirable" one), I let the child who makes the application have the vacant computer.

Choosing a partner to get a good computer, followed by a quick separation, is manipulation of the system, so I have a more severe response earlier in the period. I make sure both kids want to separate, and then I call for the room's attention. "Pat and Lee are splitting up," I say. "Do any of the other partners want their computer?" If I get more than one response, I use my list. If the other partners are engrossed in their own games, and there are no takers, I ask, "Does anyone without a partner want their computer?" Next, I do the same with their software: "Pat and Lee were playing **Think Quick**. Do any partners want that program? Does anyone without a partner want that program?" Pat and Lee get their separation, but they trade down to less desired computers and programs in the process.

A younger child whose partner is having a turn at the computer may get bored near the end of the period, and I let such kids roam about watching others, if they can stay out of mischief. Sometimes two or more pair up to run about and play, and these must be sent them back to their assigned computers. I try to use common sense. What point is there in sending a girl to watch her partner printing a poster if she has a poster of her own that she would like to color with markers nearby?

Kids are supposed to use the restroom before or after the computer period,

but my restrooms are right across the hall, so I permit one boy and one girl to be gone at a given time when the younger kids are in the computer room. If smoking or restroom vandalism is a problem at your location, you may need to be stricter.

The computer period ends when the recreation and crafts groups arrive at the door. I don't fuss at their leaders for bringing their kids a little early or a little late, and their leaders don't fuss at me, because I make them wait three minutes at the door while my group saves their work and shuts down. The crafts and recreation groups travel further and must hit the restrooms and water fountains. It is appropriate that their arrival signal the period's end.

SHARING COMPUTERS

Having discussed assignments in computer rooms where there are partners and what computer lessons children should be taught, I want to muse a little about partnerships in general.

It is clear at the offset that if one is opposed to partners and has, say, twelve computers, then one is limited to twelve persons in the computer room. If twelve children are invited to the camp, they can be in the computer room for the whole camping period. If twenty-four children are invited, they can spend half their time in the computer room, and if thirty-six are invited, they will spend two-thirds of their time elsewhere. So partnership policies affect computer camp size.

Note that I said "are invited." Not every child who is invited to camp attends, and not every child who attends on Monday is there on Friday. A camp that has rigid rules against partners will have unused computers.

In my mind, increased access for children is more important than the disadvantages of having children share computers; however, I can have my cake and eat it, too. I think that two-thirds of my children enjoy and benefit from sharing a computer with another. My model is to have thirteen computers and invite forty kids, half of whom are to be in the computer room. Of the forty invited, I expect four to turn me down altogether and another four to be absent on a given day. These are average numbers, by the way. Most attend on the first Tuesday and the last Friday, while the second Monday is an off day. On an average day, I expect to have sixteen children using thirteen computers, so up to ten can have a computer to themselves. As it happens, most days, I have unused computers. On the first Tuesday I may have 18 children in the computer room, and eight may still have computers to themselves. There was a day in 1992 when I was surprised to have 43 children in attendance. That day there were 22 in the computer room, and only four children had a computer to themselves. My recollection is that only two of the eighteen children with partners were disappointed that they could not work alone.

Initially I thought that my younger campers were more likely than older campers to prefer having a partner. I now see that this is not true once younger campers overcome their first difficulties using the computer. Sociologists make the distinction between older children, who play together, and younger children, who play side by side. If there is but one computer, playing side by side isn't a viable alternative. This conclusion supports my later conclusion that older kids

do better in an overcrowded computer room than younger kids. If you must crowd a group, crowd the older kids.

Two seven-year-olds, a girl who is a little dull and her cousin who is bright, but has a vision problem, played happily together through my 1993 computer camp. They were an exception to my rule that 7 to 12-year-old children usually choose people of the same gender as partners; however, the two verified my observation that children with physical handicaps often have partners. Children with emotional problems, predictably, tend to work alone.

Most software is written for a single user. The exceptions are games, especially those based upon TV shows. Years ago, software for the Apple][often featured programs for two players, each using his or her own paddle, an input device with a knob to twist and a button. After a few years, the two paddles were replaced by a joystick with a stick that moved in two directions and a pair of buttons. A few games, like **One on One**, were designed for joystick pairs, but the idea was never popular. Later, games for two or three players used the keyboard for input. Children, especially younger boys, prefer a joystick for input, and their partnerships frequently end after a joystick dispute.

Space is a consideration. I held my second computer camp in cramped quarters, where there was room for only three chairs in front of every two computers. The only way to have partnerships side by side was to squeeze two children into a single chair. This experience taught me to keep my computers as far apart as possible and to prefer benches to chairs.

I like partnerships. I think, by and large, kids are good for each other. It pleases me that something as technical as a computer can foster human relationships so naturally.

TAKING A BREAK

The computer camp day is divided into periods and breaks. Let's look at what happens between periods.

Restrooms

Young children need to go the restroom frequently, although not as frequently as they would like you to believe. Unless the computer camp is held in a small building where restrooms can only accommodate one person at a time, campers should be taken by the restrooms at the beginning of the day, at the end of the day, and between periods.

Some supervision is needed, but no obtrusive invasions of privacy are required. A junior counselor of either sex can manage things by standing in the hall to see that boys and girls do not invade each other's facilities and that no one remains in the restroom longer than necessary; however, I hire one male and one female teenager simply to allow closer supervision when it is necessary and to check that toilets are flushed after the group is finished.

Children ought to wash their hands after restroom use, and some care should be taken to enforce this before meals by examining hands, rather than by entering restrooms.

Transitions

There are a number of things that can be done to smooth the transition from one period to another. Some activities, such as a game of tag, can be interrupted at a moment's notice without causing anyone to be upset. Indeed, the smoothest way to end a game of tag is probably to do so abruptly, so children have no opportunity to drift off into inappropriate places or activities.

In other cases, notice is important. A child who has worked on a computer drawing for an hour will not like to be told: "Turn that computer off, now!" The problem is avoided by saying: "The period will end in five minutes. Save your drawing so you can finish it when you come back after lunch." Children working on crafts will need notice to put some finishing touches on their work before they put it away.

Keep the group together. This is easy when leaving a crafts room, but won't happen when leaving a playground unless you establish and enforce a standard procedure for getting from one place to another. It is particularly important to keep together when the building is in use by other persons. Transitions during the summer months need to include the drinking fountain as well as the restrooms.

Older children should have the discipline to stay in line when told to do so, and can be moved to the end of the line when they disobey. Younger children are more apt to get into trouble through impulse than through intent, so structure their movement. For example, you can bring along a rope, and require kids to hold it in one hand as they walk, or you can involve them in Follow the Leader. If both a leader and aide are present, the simple rule is: "No kids in front of the leader or behind the aide."

Transitions are complicated when an activity is delayed and children are congregated with nothing to do. If this occurs in a meeting room, singing is a traditional way to pass a few minutes. Choose songs for their popularity and don't insist on participation. Just begin.

There is participatory singing, which is the best way to ease a transition, and there is singing for entertainment, which will work for a shorter time. My singing is in the "joyful noise" category, but I entertain children with Halloween songs, such as those in the appendix, and they like to join me in "Take Me Out to the Graveyard."

Small groups like stories, and I have a repertoire of ghost stories that are popular. I use these to keep kids quiet when I drive a van and in the computer room when we turn off the computers for a thunderstorm. Conventional wisdom says that young children shouldn't be told ghost stories, but none of my stories approach the horrors of primetime television. Those of you who aren't offended will find an assortment in the appendix with the Halloween songs.

Feeding Them

I used to get irritated. I would be demonstrating new exciting software, and children would interrupt with: "When do we eat?" I thought they were rude. I was mistaken. They were hungry.

If your camps are carried out, as mine are, in what the federal government calls an economically deprived region, then many of your children are eligible for reduced price or free meals under the school lunch program. If the percentage exceeds fifty percent, you may be surprised to find out that similar funding is authorized during the summer months by Section 13 of the National School Lunch Act. Sponsorship is available to public or nonprofit private schools, units of government, public or nonprofit private camps, and private nonprofit agencies; however, the regulations vary somewhat for these categories.

If you are looking for federal funding, do so early. To choose sponsors for food served during the summer of 1994, the Kentucky Department of Education requested that their questionnaire be returned by February 11. It is not necessary that the camp be conducted in a school or that the meals be served from a school lunchroom; however, your local school is the best place to get started on the necessary paperwork, since they already have experience with it.

The 1994 questionnaire asks for the following data: the agency's name, address, phone number and coordinator; the type of sponsor (e.g., school); starting and ending dates; hours of operation; type of meals to be served; total number of days that meals will be served, month by month; number of sites; number of children expected daily; percentage of children receiving school lunches free or at reduced rate; and method of providing meals (e.g., by contract with a food management company).

The rules vary annually, so I won't try to list them all, but certain regulations have been in effect for years and are not likely to change.

Those who serve the meals are required to receive some minimum training in their responsibilities, so schedule a morning for training before the camps begin. Sanitary regulations are strict. For example, servers must wear hairnets and latex gloves.

If you are reimbursed for both a snack and a meal, there must be a three-hour interval between the two. When dealing with many different sponsors,

as I do, my lunch hour varies from summer to summer, but when I am given my choice, I serve the snack at 7:50 AM and lunch at 11:00 AM. A camp serving migrant children is entitled to serve food four times daily.

Were it not your government and mine, I would label as inane the way in which meals are distributed. Children may not serve themselves, but they are required to sign their name: no checking off from a roster! Each child is handed a plate with an identical meal. The smallest 7-year-old and the heaviest junior counselor receive the same portions. Milk must be served in individual cartons. Once a child has a plate, he or she may exchange servings with another, but there is no provision for someone to get more of what they like and less of what they dislike. There is the usual foolishness about mixing foods together, despite studies demonstrating that children eat separately what they will not eat mixed. Day after day, one third to one half of the food goes into the garbage, because there is pimento in the cheese, the possibility of onions in the stew, or a mushroom anywhere.

Before our camp was enrolled in the school lunch program, children took what they wanted from a buffet. The rule then was: "If you take it, eat it." The federal rule is: "You have to take it. If you don't want it, give it or throw it away." The federal rule is designed to assure that all children are treated equally, but its greater benefit is to the farm bloc.

Of course we encourage children to try things, to "take one bite." Some days there is enough food so that children can have seconds, but the inanity persists: they must get a whole new plate.

I'll get off my soapbox.

Serve meals if you can. In regions such as mine, the hot lunch you provide may be the best meal the children receive all day. If you are able, serve familiar foods. If you can't, urge them to eat the unfamiliar foods and those nutricious mixtures. Set an example. Eat them yourself. Seven-year-olds eat more slowly then twelve-year-olds, so head the line with little kids and give them time to finish. Make sure that lunch is pleasant. If the lunchroom isn't in the middle of a school or business area, let them talk. Don't let kids eat pop or candy before lunch (and don't let your staff eat junk food in front of them). Tell the staff, especially the teenagers, not to criticize the school's food.

Snacks are simpler, and the threat of mixed foods is reduced. Do encourage children to eat their snack, and don't ask them to choose between a snack and time on the playground or with friends.

After lunch our kids are allowed a little junk food. I leave the lunchroom about ten minutes early, taking one of the kids as an assistant, to bring candy and cold pop to the school. We charge a quarter for candy, a quarter for "brand-name" pop, and fifteen cents for less expensive brands. As a matter of policy, we lose a few cents on every sale. There are no seconds for children or for the staff.

Sometimes, a child arrives without money. In such cases they get a "generic" pop free, but no candy. Frequently a parent or sponsor will provide some extra money for kids who can't afford pop and candy. When this is available, say "Get a candy bar, too!" to the kids who don't bring money. I don't extend credit. Candy and pop are free on the last day so that we don't have to fool with money at the picnic area.

Even in poverty stricken areas such as ours, most children can afford their candy and pop (at least, most bring the fifty cents). The money is often carried in a sock, because young kids wear clothes without pockets, so I keep track of what I owe them instead of giving change. As I go down the list I'll say, "You need to bring a dime tomorrow," or "Don't bring any money until Tuesday. You're paid up." On the next to the last day everyone receives what I owe them just before departure. About one child out of forty is instructed by parents to bring change home daily, and they get it. A few children elect to bring their soda home with them. This is permitted, if the can has not been opened.

For the last six years we have taken the children to a nearby park for a picnic on the last day. We run a normal schedule through the first two periods, so everyone gets a chance at the computer. Then I keep almost all the children in the computer room while the rest of the staff take a few of the older kids with them to the park to light the grill and cook hamburgers and hot dogs. When they are ready, they return for the rest of the kids and me. They eat their candy and pop with the meal at the picnic. After lunch the children have a well-publicized and much anticipated water fight: sponges, water pistols, and, sometimes, balloons. The few who want to stay dry and watch are allowed to do so. After the water fight, everyone gets an attendance prize and are driven straight home from the park without a stop at the school.

Last thought: if your area does qualify for the federal food program, your kids will not be as hungry, but hit your parents up for cookies and Kool-Aid, at least.

For several years we had a policy that a child who ate no lunch could not purchase pop and candy afterwards. One of the boys objected, so I let him buy a snack that day, but told him he couldn't do it again without a note from his mother. The next day he brought this:

> My children do not have to eat the lunches at computer camp if they do not like what they are having. I give them money for snacks. If you have any questions, call me at ____-_____.

I suspended the no-snacks rule for everyone, but the following year I added this line to the permission slips:

> Child has permission to buy pop or candy even if he/she doesn't eat any lunch -- yes ( ); no ( ).

The skinny kids came with slips checked "no." The plump kids had slips checked "yes." So, I gave up.

As one of their lessons, children are taught what to do at their computers when told that the period is ending. From the organizer's standpoint there is a little more to it than that. Both individual periods and the camp itself should end smoothly.

CLASS PERIODS

It is helpful if successive activities in the computer room move from highly structured and instructor centered to loosely structured and child centered. There are a number of reasons for this.

For one thing, it is much easier to be structured at the beginning and then become looser than it is to begin loose and try to tighten up. The children are ready to give attention to the instructor at the beginning of the period, they have no other activities under way, and they are all beginning at the same time.

As they get into their lesson, it is no longer necessary for the instructor to lead through every step, the noise level increases, and some students begin to make more progress than others. At this point the instructor and the computer room aide may move from person to person, beginning with the most advanced student, confirming that the morning lesson has been mastered. Those that finish early are not permitted to get a new disk, but they are allowed to explore the other programs on **CampMaster**. Fifteen to thirty minutes into the period, everyone has finished the lesson and campers are ready for something new.

As indicated earlier, computers were assigned from a formal roster, beginning at the top of the list. At this time, children are allowed to get new software from either the box of educational disks or from the "adventure box," beginning with the child whose name ends the list. After the first couple of days, the transition to new disks takes place rapidly, and the children, even noisier now, begin learning from the disks of their choice.

During this phase the instructor and the computer room aide move from computer to computer to answer questions, compliment students on their progress, or watch what is happening. It is at this time that I record in my notebook what points the child is earning, from four points for lesson continuation (usually Logo), to three points for creative activity (writing, drawing, or music), to two points for an educational disk, to one point for an adventure game.

Camp: ____________________; ___-___-___ to ___-___-___

NAMES	ATTENDANCE M	T	W	T	F	LESSONS	BONUS POINTS	TOTAL

CAMP ___

Name	ATTENDANCE MTWTFMTWTF	LESSONS	POINTS	

A few minutes before the period ends, the children are told that they are running out of time, so that they can either finish or save what they are doing for a later period. In addition to containing lessons, the student's personal 5.25" Camp Master disk is formatted to allow storage of word processing files, drawings, or other files. In other instances, with programs from The Learning Company, for example, and most 3.5" software, games may only be stored on a disk formatted by the publisher. In some cases the computer room supervisors may need to delete a former student's file to create space for storage of a new one. To minimize this, I dedicate a small box of 3.5" disks to storage of old games.

When students come back to the computer room for their second daily session, they are not required to return to the morning's work. Some do, but others go straight to the game box, choosing to pick up the morning's work the following day, if at all.

The daily sequence from lessons to educational disks to games is intended to take advantage of children's interest in the morning, while ending with something fun to remember.

ENDING THE DAY

To render the day more pleasant, begin with the group working together, rather quietly, and end with each person having fun on his or her own, or with a friend, rather noisily than not. The trick is to loosen the reins as the day proceeds, but not so much as to bring premature gray hairs to those in charge.

Another sequence I use is to have older children in the computer room and younger children at play in the morning and the reverse at the end of the day. At the end of a hot day, all children tend to become a little crankier and less responsive. All things considered, the more mature, peer centered older kids are easier to handle in a group than the less mature, more egocentric younger hids. Thus, we put the two younger groups in the computer room, which caters to their individuality, the next oldest group in crafts, and the oldest group of all in recreation where we are still asking for group participation. Another factor is the way in which older and younger children respond when they are tired. The older disaffected child tends to opt out and sit to watch, while the younger dropout wanders about until he or she gets into mischief. It is easier to keep an eye on wanderers inside than outside, and the variety of computer programs available may prevent dropout altogether.

Remember that computer periods, especially, end more smoothly if children are given some notice so that they have time to print or save their work. One of the computer literacy lessons deals with the shutdown procedure. Children should save their work, make sure that no disk drive lights are on, turn off the computer, place any 5.25" disk in its envelope, and place the disk in a designated place. Children use soo little documentation that I collect that myself. If children are using a system with a hard disk, there may be an additional step to park the drive heads before the computer is shut off.

At the end of the day, we collect all the children in one room. Some sponsors will wish to have a formal closing ceremony each day. For example, a Bible School may require a closing hymn or prayer. There is no value in a closing exercise unless it is tied to sponsor objectives. If there is a message for the parents, this is the time to give it. If the message is important, it should be in writing. Those who walk to the camp or have parents waiting are allowed to leave. As each van is ready to depart, its passengers line up at the door of the room and are led as a group to the van.

Most of our bus schedules require two van trips, with some children remaining at the camp site while the vans take their first loads home. If the wait is a long one, it may make sense to reopen the computer room for those who wait; however, if the vans get back in 20 minutes or less, the children usually prefer unstructured free play with an adult in the background for emergencies. This also provides counselors an opportunity for record keeping, cleanup, and preparation for the next day.

Rooms used for the computer camp should be in order before counselors depart. Recreation and crafts supplies should be put away or in readiness for the next day. Floors should be swept, and trash emptied. Air-conditioners, if any, should be turned off. In the computer room, power to the equipment should be disconnected at the wall and floppy disks collected, arranged, and stored. There should be adequate paper for every printer, and documentation should be refiled.

A local couple has three children, the oldest of which attended my first two computer camps. Then there were some problems, and the kids moved out of town with their mother. I saw the father regularly in town, and he boasted about their success at school. I had hopes that they'd be able to visit him during the summer, allowing me to enroll them at camp, but that never happened.

After several years the father told me that the children had moved back into the region, although they were living at the extreme edge of the area for which we provide transportation. I found them a few days later, a long way off the main road, living in an old schoolbus, cooking and washing next door with their mother's parents.

They attended camp that summer from the bus without incident, and moved out when school started. I think they enjoyed the adventure. Another boy attended camp that summer while living with his grandparents in a mobile home parked at a local campsite. What's the difference?

Handling Disruptive Behavior

The good news is that computer camp is not school, and most of the children are there because they want to be. As long as that is true, discipline will not be a major problem.

The old medical adage, "Prevention is better than cure," applies to computer camps. Keep temptations out of sight and give the kids something to do. Here are some other suggestions.

GROUND RULES

Kids think they should dislike rules, so when you make your rules, call them something else. Use words like: "The way we do it..." On the other hand, don't wait too long to establish how things are done. If flipping a light switch off and on again is the signal for silence, say so the first morning, and try it out before they forget. Mix the rules with neutral things or pleasant things, like the names of counselors and something good on the luncheon menu. The rules you mention in the morning should be those that apply immediately, like keeping your hands to yourself. Picking up after yourself may be another expectation, but the time to mention it is the beginning of the crafts period. If kids cross a highway to get somewhere, outline the procedure for doing this when they line up to go, not when they arrive in the morning. If you set rules, keep them. Punish children (mildly!) for the first infraction of an established rule. Don't give chances. Children know that "This is the last time I'm going to tell you!" means "I'll probably go on telling you this." If you are sure the offense occurred in ignorance, tell everyone, not the offender, what the camp's expectation is.

NAME CALLING

A common problem with young children is name calling. I have achieved some success in handling this through a camp rule that I announce on buses and as often thereafter as I hear name calling. Tell the children:

> "At this camp, everything bounces. You can only talk about yourself. If you say to Pat, 'You're fat!' that doesn't mean Pat is fat. It means you are! Of course, if you say, 'Pat is smart!' that also means that you are smart. If anyone seems to say anything bad about you, just say 'It bounces!' to remind them that they are talking about themselves."

To avoid offense, when you choose the "fat child" for your example, select the skinniest kid in the van. The rule works pretty well, as evidenced by the fact that I hear insulted kids saying "It bounces!"

PREVENTION

Tired of frequent, expensive lock changes on the outside doors, the school where I operate switched to heavy chains and padlocks. When the custodian unlocks in the morning, he leaves the chain and open lock hanging from the door handle. One afternoon, although the lock was there, the chain was missing. After searching for an hour without finding it, we locked the door with another chain that was only fifteen feet too long. The chain hadn't been stolen. A boy saw it there, removed the lock, and spent a few minutes swinging the chain around before tossing it in the creek that runs by the school.

The custodian still unlocks the chain and hangs the open lock from it, but when I arrive, I lock the chain around the handle. That's an example of removing temptation.

The rooms I use in the summer are classrooms all winter, and they contain all sorts of books, school supplies, and other items left by teachers and students. I lock up or put out of sight everything but the books. Sadly, no child ever looks at a schoolbook.

There are markers, not pencils near the computers, because a pencil will harm a floppy disk, but a marker will not. There's no chalk in the trays, because kids like to write on chalkboards, but computers don't like dust. Wires go under or behind tables, where they are out of the way. Rather than tell 150 children repeatedly that they are not to turn the printer knob when the printer is on, I remove the knob.

I can't list all the things you should do, partly because there are so many, partly because children are endlessly inventive, and partly because your site is different from mine. I can advise you to look around and remember another adage: "Out of sight, out of mind!"

On an open playground, where there are few temptations, children can play freely without a structured program, provided there is an adult in the background to handle emergencies, but where temptations are present or children are supposed to be "under control," it is much easier to keep them busy than to police them. It is always more pleasant.

After a problem has arisen and the situation has been corrected, take a minute to say to yourself: "What was the child supposed to be doing?" If the best you can do is "Behaving himself!" or "Sitting quietly," blame yourself for the disturbance. There should be, every minute of the day, a planned activity for every child. The activity should be within the child's capability and reasonably interesting.

Although a planned activity is essential, it helps if each child has choices. If 7-year-olds in a crafts room may color, cut out pictures, or glue craft sticks, there's a reasonable chance that they won't play tag. Don't confuse the advantage of providing individual choices with the disadvantage of acting on a group choice. Children don't have democratic souls, and when they are asked to participate in a group activity that they just voted against, they'll not be cooperative. Solicit suggestions for indefinite future dates. You'll get some good ideas with the impractical ones, but don't vote on what to do immediately.

DISCIPLINE

If you are new to working with young children, you may fall into the trap of trying to make them like you so that they will do what you say. It doesn't work that way. In fact, it works in reverse. If children like you, they will assume you like them and that you will let them get away with murder. The younger the leader, the harder it is to risk "not being liked." A large group of children led by an adult and a junior counselor can have problems if the teenager responds as a child rather than a supervisor. The older counselor will need some tact in recalling the teenage helper to his or her responsibilities.

You can be as strict as you like without forfeiting the good will of children, provided you are fair. Having said that, I'll admit that fairness lies in the eye of the beholder. Do not let a child put you on the defensive defending the fairness of what you propose. For example, it is inherently unfair for any child to go first, but someone must, so don't defend your choice. Don't promise that the angry child can be first the next time. That's unfair to others. Simply say, "Pat is first today, and someone else will be first next time."

In my computer room, I am continually faced with the choice of who gets to do what and when. My use of prearranged rosters, as described elsewhere, may seem unnecessary to leaders who prefer to wing it, but I avoid countless arguments.

You can turn "who goes first" into a disciplinary aide. At a computer camp there are continual opportunities to go first: for computers, for software, for

lessons, for snacks, for lunch, for seats on the van, and so on. Moving someone to the back of the line is an instant, non-punitive response to inappropriate behavior, just as moving someone up in line can reward a child who helps another.

PUNISHMENTS AND REWARDS

Educators urge that children be motivated by rewards for appropriate activities, rather than punishment for improper behavior, so look for good behavior and recognize it. Neither punishments nor rewards work well if deferred. I once allowed my counselors to take from a misbehaving child the right to buy a pop or candy bar after lunch, but my young children didn't respond well at 9:30 to an 11:40 punishment, so we discontinued the option. If you are going to reward a child, do it immediately (a smile or a compliment may be all that is needed). If a child needs correction, do that immediately, also. I've mentioned moving children in lines. I'll show a boy who misbehaves that I'm moving his name down a notch or so on my list of who chooses software. Sitting out is an alternative, if you don't overdo it. Five minutes is plenty for a time-out.

FIGHTING

From time to time, especially during recreation, you will have a scuffle. I have learned over the years that it is impossible to determine who is at fault in such cases. Perhaps Pat hit Lee today, but Lee hit Pat last Thursday, because Pat took Lee's cap the week before, having lost his cap ten days before when Lee wanted to get back at Pat for... You get the idea. Separate the combatants. If you punish anyone, punish both (for fighting, not for starting a fight). If someone is hurt or crying, offer sympathy.

I've been fortunate not to have any personal disciplinary problems in thirteen years, and I haven't found it helpful to involve parents in minor disciplinary matters. Once, in 1992, an 8-year-old who would not follow instructions and persisted in running away from the school grounds was told he would have to stay home for a day, which he did. Of course, the parents were told the reason. The following summer his parents sent his sister, but would not allow him to attend. That was overkill.

Here's another case of inappropriate parental involvement. A 11-year-old boy was involved in a game in which an 12-year-old ran into him, knocking him to the playground grass. The two boys knew and liked each other, and there was no doubt that the contact had been accidental. Unfortunately, when the 11-year-

old's older sister got home she reported what had happened, and the 11-year-old was sent to camp the next day with instructions from his mother to "get even" or face a whipping. I was told the situation and got the boys together in the hall, where the 11-year-old explained his instructions. I confirmed that the incident had been accidental, and no one was angry at anyone else. "Do you mind if he shoves you?" I asked the 12-year-old. "I don't care," said he. The shove took place, with some energy, and the boys returned together to their room. I did remember to tell the sister that she could relax. Her brother had gotten even. I also asked her to stop telling tales at home.

Perhaps, in my place, you would have gone to the mother. Had the boy been told to get his revenge with a rock, I might have. As it were, I was glad to resolve the situation. Luckily I was on easy terms with both boys and the sister.

Infrequently there are two children who have been pushing and shoving each other for years. It makes sense in such cases to keep them busy in different parts of the room or to rearrange schedules or assignments to get them into separate groups. When you are arranging to keep them apart, remember to get them into separated seats on the van home.

CONFRONTATIONS

Occasionally you and a child will find yourself in a confrontation with the child on the edge of losing control. Keep smiling and get the child out of the room away from the other children. Use neutral terminology: "Let's you and I go outside and see what we're going to do about this." When the child no longer has to maintain face in front of peers, he or she is apt to want peace as much as you do. Should an older camper begin to cry, provide enough time outside so the kid can rinse his or her face and return to the room with dignity intact. If the child is under control, you can return first, answering inquiries with: "Lee will be back in a minute."

A child who fears failure and declines to participate in an activity should be given an alternate task. Discover that you need a scorekeeper or find a simple task or errand that must be done. You may be pleasantly surprised to find that the biggest nuisance in the room can provide genuine help with a routine job.

TROUBLEMAKERS

In a camp of forty children, there may be as many as three that cause you more trouble than all the rest put together. Fritz Redl and David Wineman have provided some very useful techniques for dealing with aggressive children in their

book "Controls from Within." The book was published in 1952, its psychoanalytical framework is no longer popular, and the children they discuss have much more severe problems than any you will encounter; nevertheless, Redl and Wineman worked day in, day out with aggressive children, and when they tell you how to cope with a difficult situation, you should listen.

Chapter III of their book contains seventeen "techniques for the antiseptic manipulation of surface behavior." Here they are, and they work... all seventeen of them. The titles of the paragraphs are those of Redl and Wineman.

Planned Ignoring. Before getting upset because a girl is cracking her knuckles or a boy is drumming on the table top, consider whether the activity is really bothering anyone else. If it isn't, ignore it.

Signal Interference. Much inappropriate behavior can been avoided by catching a child's eye and shaking your head at the instant of impulse. Smile when you do it.

Proximity and Touch Control. If a group of children are beginning to act up, get a little closer. Rather than shout at a ringleader, try a gentle touch on the shoulder.

Involvement in Interest Relationship. When you see signs of boredom or frustration, increase the importance of the child's work by taking an interest in it. Ask a question. Listen and respond to the answer.

Hypodermic Affection. Every now and then a child needs affection. The boy who is always wrestling others to the ground may do so because it is a way of touching others. Try a momentary arm around the shoulders hug or an affectionate pat. Keep it light and use common sense in where you touch a child.

Tension - Decontamination through Humor. If you are involved in a confrontation or arrive on the scene too late to prevent the beginning of an incident, you may be able to defuse the situation through humor. Were you to slip on a banana peel, for example, the crisis would probably be over. You can probably think of something a little more dignified. Do not, of course, make fun of a child.

Hurdle Help. Sometimes children become angry due to an inability to handle physical or emotional problems. Lend a hand to get them over the hump. The foul mood may vanish in an instant when you fix the broken craft project or apply balm to someone's hurt feelings.

Interpretation as Interference. There is no intention here of interpreting deeply seated emotional problems. All that is intended is a simple explanation when a child misinterprets a situation. You might say with a laugh, for example, "Lee said you had sticky fingers because you got finger paint on them. Nobody called you a thief!"

Regrouping. Some children, some days, don't get along with certain others. When that happens choose new teams or reassign computers. If the problem persists, a more permanent reassignment may be needed. The oldest children in younger groups and the youngest children in older groups seem to have the most difficulty, and these are the easiest children to reassign.

Restructuring. Sometimes an entire group may get out of joint, because they are bored with a particular activity. Not every craft project or computer game turns out as well as was expected. Don't demand attention for a dull task. About once during each computer camp, throw the book away, and do something different. Go outside and play tag for ten minutes. Break the pattern of discontent in a positive way, and then begin anew. You do have an alternate activity planned, don't you?

Direct Appeal. I've done this many times, and it works. Look the child in the eye and say firmly, but not angrily, "Pat, what you are doing makes me angry, and I don't want to be angry with you. Would you stop it, please?" Redl and Wineman give twelve other ways to make a direct appeal to a disruptive child, twelve more reasons to read their book.

Limitation of Space and Tools. I talked about this earlier. Keep temptations out of the children's way. Don't hand out kites near power lines. Structure how knives are used in a crafts area. Schedule water fights outside, not inside.

Antiseptic Bouncing. Redl and Wineman do not recommend the exclusion of a child from a group if the action can be avoided; however, it may be necessary. If the child is under control, let him or her take a walk with the junior counselor, or have them move to another group for a while. Don't reward bad behavior. If a boy has trouble during recreation and is brought to me in the computer room, I let him stay, but he isn't allowed to play with the computers. Often, I give him a job to do. If a child is taken from a group crying, let him or her regain control before the return to the group.

Physical Restraint. A child is rarely so angry at a computer camp that physical restraint is necessary. You are not advised to try it unless you have had

some professional training. Consider other alternatives. If children are belligerent, simply stay between them. I broke up a knife fight in Kansas City once by doing this. Had I attempted to restrain either teenager, I would have been in deep trouble. If a boy is not too angry, you can restrain him by standing behind him and crossing your hands over his chest in a hug, but you must keep it friendly. If a child goes into a tantrum, walk the other children away and leave the angry child with a teenager to calm down. The teenager should not attempt a restraint.

Permission and "Authoritative Verbot." Sometimes you can get a child to do something by abruptly giving permission. For example, if Pat is behaving inappropriately, but you think a break would solve the problem, say: "Pat, you can go get a drink, if you like." Alternately, grant permission to do what it is you want done: "Lee, you can start a line at the door, if you like." An "authoritative Verbot," on the other hand, is an absolute "No." Put on your best school teacher expression and say, with every expectation of being obeyed, "You will stop that, now!" If you use an authoritative Verbot, be prepared to do something about disobedience immediately, because you will draw every eye in the room. The less often you use this, the better it works.

Promises and Rewards. Redl and Wineman are not enthusiastic about bribing children to behave properly. Young children, generally, and disturbed children, particularly, have trouble making the "if... then..." connection implicit in effective use of promises and rewards. Another problem is that a reward on Monday will lead to the expectation of a reward on Tuesday. If you use rewards, fit them to the circumstances: "Pat, I like the way you're standing in line without making a fuss. Why don't you come up here to the front?" Praise is often an adequate reward.

Threats and Punishments. Last on Redl and Wineman's list is punishment. Disturbed children, they warn, rarely associate the punishment with the deed. Punishment is a sign that you don't like them or that they aren't worth anything. If you must punish a child, see that the punishment occurs on the spot and is directly related to the problem. Avoid threats.

These summaries do not do justice to Redl and Wineman's book. It is available in paperback, and you should buy a copy.

Let me end where I began. "The good news is that computer camp is not school, and most of the children are there because they want to be." They expect to have a good time. You can expect to have a good time, too.

CAMP ADMINISTRATION

Recruiting and Training Leaders

WHOM DO YOU NEED?

My computer camp utilizes a computer room operator doubling as camp director, a crafts instructor, a recreation leader, and three teenaged aides. Two of the adults also drive vans to bring the children to the camp site. The job descriptions that I use are included in the appendix. Our sponsors provide custodians, cooks, and secretarial support.

The Computer Room

A camp cannot be designated a computer camp without a computer room, and that room will require someone to run it. An immediate conclusion would be that someone is needed who has computer expertise and works well with children. That is a false conclusion.

As user-friendly as computers have become, it is still true that a computer room needs someone who understands computers at a level deeper than the children who will be using them. Operating a computer room filled with active children also requires someone who works well with children and likes them. These two requirements can be met either by hiring a computer expert who can handle kids or by hiring two people: an adult which child-handling skills and a teenager who knows a lot about computers.

Since many sponsors will not know of a computer expert who wants to take on a computer camp, it makes sense to look at the second option. Rather than look for computer skills, sponsors should look for people who are good with young children, are free during the computer camp period, and have an interest, though not an expertise, in computers. School sponsors, I have just described your elementary school faculty. Church sponsors, doesn't that sound like a youth director or a Sunday School teacher? Interested parent, could I be describing you? Let me repeat the qualifications: good with kids, free for the summer, and not terrified of computers. That's a lot of people, if you look around.

On the other hand, after you have found this person, you are only half way there. Where do you get the computer expert?

You can ask, if you like, at the local computer store, your community college, or other places where the technical types earn their high salaries, but don't be optimistic. Unless you happen to run into a recent retiree, off the job long enough to become bored, computer experts are expensive and unable to spare the time for a summer long stint as a volunteer. Where then, is your expert?

What you want, my friends, is commonly described as a nerd. Many are teenagers. Movie and television nerds have glasses, acne, an unbalanced intellect, and few social skills. In real life, acne and glasses aside, they are simply more intelligent and more mature than their peers, have had an early love affair with the school computer system, and would jump at the chance to earn minimum wages working with computers all summer. Two of the people who have helped me didn't even want to be paid! To avoid the movie stereotype, I'll call them hackers rather than nerds.

If the school has a computer room, ask the instructor which kids hang around to help out before and after school and already know the system. Math and science teachers may also know who has a home computer or is always using the one in their classrooms. Your hacker will need to be able to work with kids, so check that out, also.

If a sponsor knows in September that they will be operating a computer camp the following summer, they can train their own personnel. Lend the hacker a computer and some software to take home and learn inside out, and let the adult learn a little from this or other books. I'd pay them a little for their time: $50 a month to the hacker and $100 to $200 for the adult.

If you do happen on someone who has the time, works well with kids, and knows computers, you should still get them a teenager to help in the computer room. In that case, value social skills over computer skills, and try to find an aide who is likely to be available the following summer if the first goes well.

Van or Bus Drivers

In our mountain community it is harder to find a trusted van driver than a good recreation leader. That is why this job is listed next.

It isn't impossible to run a computer camp to which children are brought by their parents; however, we elected to provide transportation in 1985 and have

done so since. We do this because the poorest children need transportation, attendance is more regular, and it allows us to schedule which children will come to each camp.

In larger communities parents may not ask about van drivers, but in small communities such as mine, "Who is driving the bus?" is a frequent question. So frequently am I asked, that my primary criterion for a bus driver is that parents will nod approvingly when he or she is named.

Our vans are lent to us by a children's center and a church, and these agencies prefer drivers old enough not to increase insurance rates. Parents also value maturity and experience, so most teenagers are not qualified as van drivers.

In addition to maturity and experience driving our narrow, winding roads, drivers must be able to exert sufficient discipline to keep children in seats, preferably in seat-belts, and maintain order on the bus. They need to know the area well enough to find children's homes, and they should be able to serve as a go-between for communications between the parents and the camp.

As the job description in the appendix indicates, no bus driver was ever in trouble for being a little late. It's travelling too fast or leaving too early that will offend people. There is a natural tendency to try to "make time," and good bus drivers will resist this temptation.

A major difficulty in hiring bus drivers is the work schedule. The starting time will vary from 6:30 AM to 8:10 AM with bus runs as short as fifty minutes or as long as ninety minutes. The afternoon runs start at either 1:00 PM or 2:00 PM and end as early as 2:00 PM or as late as 3:30 PM. The driver is not paid for the five hours the camp is in session. Few people will work this schedule for minimum wages.

Our solution is to have our adult leaders drive vans as well. I have driven one of our vans for thirteen years, and another leader drives the other. Van drivers acceptable to parents are harder to find than crafts or recreation leaders. From applicants for jobs, we make up a short list of acceptable drivers and then see if any can handle the crafts or recreation assignment.

On occasion we have been able to get unpaid volunteers to drive for as long as two weeks, usually from the church sponsor, but it is not realistic to expect volunteers to handle eight or ten weeks of computer camp. With shorter camps, volunteers should be considered.

Crafts Instructor

During the four class periods, the crafts instructor is responsible for finding some creative activity for a group of up to ten children. A teenager provides assistance.

Crafts shops sell many kits that allow children to make such things as lanyards, key rings, enamelware, and painted plaster figures. These kits are wonderful if you can afford them. My problem is that I enroll as many as forty students daily on a negligible crafts budget. Consequently, I prefer a crafts instructor who can make do most days with tempera, crayons, construction paper, glue, and ingenuity. Assistance is available from crafts books written for the purpose, but nothing substitutes for a clever person who enjoys helping children make things.

To find an acceptable crafts instructor, go to local schools, churches, or civic centers, beginning with your sponsors, and ask for recommendations. If you don't find someone who wants a summer's work, you may find someone who will volunteer to help an untrained adult for two weeks, time enough to get through the first computer camp and establish a program of activities that can be repeated in later camps.

Only two of my crafts leaders, young women halfway through their degrees in teaching, brought previously learned crafts skills to the job. The rest took crafts books home to read, tried to remember what they had enjoyed making as children, and came to camp with a smile to do their best. Some of those things that worked will be found in the crafts chapter of this book. The job description that I use will be found in the appendix.

Recreation Leader

Like the crafts instructor, the recreation leader has four periods daily when ten children will come to him or her for an hour. Having just been cooped up in the computer room, they expect an opportunity to run and be noisy. Life is complicated on days when it is raining or very hot, especially in a summer school setting where noise is only permitted outdoors. The easy solution of planting the children in front of a television set is discouraged, although exceptions are made. The recreation leader should also have a teenaged assistant.

We have found it easier to recruit recreation leaders than crafts instructors, because applicants know they aren't crafts experts, but assume that they can lead

recreation. There is a difference between watching the children play and leading them. Recreation leaders must also take home books to read and try to remember what they liked doing as children.

The separate chapter on recreation and the job description in the appendix will help define this job.

Junior Counselors

Eight years before I began my first computer camp, I led a group of 12 to 14 year old boys at a summer day camp. We played ball, built birdhouses, and got through somehow. The following summer, the camp organizers decided that they would employ as junior counselors 14 to 17 year olds from a local institution for neglected and disturbed youth. I thought that was ill-advised, stupid, and potentially dangerous. I was wrong.

In a convincing refutation of self-fulfilling prophecy, the teenaged assistants were worth their weight in gold. They ran errands, gave instruction to individual children, were sterner disciplinarians than I ever thought of being, and enjoyed their responsibilities.

If there is any way that you can afford it, hire junior counselors. Churches and schools often have service groups that may provide youthful volunteers during the summer. A problem I have encountered with volunteers is that they will leave you without notice to take a paying job, and some volunteers are not responsible about work hours. On balance, you should pay your teenagers.

Having said that junior counselors are valuable, let me caution about giving them adult responsibilities. Don't let them drive vans, even if they come to work in their own cars. They can remind children about rules, but they shouldn't have the authority to punish them. They should not have a group of children in their sole charge for more than a few minutes. They are entitled to some training.

You may find helpful the job descriptions for junior counselors in the appendix.

Sponsor Activities

I want to return to a point I have made frequently in this book. Activities at a computer camp are not limited to crafts, recreation, and a computer room. If your sponsor is a chapter of the American Red Cross, for example, activities may center around a swimming pool rather than the computer room, and your most important colleague may be a Water Safety Instructor. In that case, the sponsor's objectives will be paramount in hiring and supervising that person.

WHOM ELSE DO YOU USE?

My camp is fortunate in having sponsors who prepare our snacks and meals, provide security for our site and equipment, and, on occasion, drive the vans that they lend us for transportation.

Food Service

Most potential sites for computer camps, including churches and schools, have facilities for preparing and serving meals; however, elaborate facilities are not required. Milk and cereal or fruit juice and a sweet roll make adequate snacks, and these can be prepared off site and brought to the camp. In a similar manner, sandwich lunches with milk, fruit and a side dish like beans or slaw can be prepared off site if necessary.

While it is possible to depend upon the volunteer services of sponsors and parents, the availability of federal funds makes the hiring of cooks possible and proper. Where the kitchen of a sponsor is in use, it makes sense to use the sponsor's cooks, leaving to the sponsor the decision whether to seek reimbursement for the cooks' wages.

Someone needs to prepare menus, especially if federal guidelines are to be met. Having no expertise in this area, I offer only two suggestions. The first is that heavy, hot meals are inappropriate on heavy, hot days, so either avoid these meals or provide the kitchen with hot day alternatives. The second choice is simpler. Stand near the garbage can and eliminate from future consideration those foods that go into the garbage untasted.

Security and Custodial Support

As it makes sense to use a sponsor's cooks in their kitchen, it is also sensible to use a sponsor's custodians at their site. At my camps the school custodians are responsible for security of the building and cleaning of the halls, gymnasium, and rest rooms. One of the custodians works at night and doubles as watchman. My staff unlock and lock the rooms they use and are responsible for their cleanliness; however, the custodian will clean the floors for us if requested.

Because our first day of camp may also be the first day of summer vacation, and because our last day impinges on opening of school for the fall term, it is difficult for our school to paint and do other summer repairs on the

rooms where we operate. As a result, we are sometimes asked to move our activities from room to room while they follow us with a paintbrush. In the midst of these inconveniences, good will and full communications are essential.

Only once in thirteen years could my camp have made use of daytime security personnel. There are no law enforcement officials within a fifty-minute drive of our rural facility. The parents of one of my children had separated and were involved in litigation concerning parental custody and allegations of child abuse. The father, who was under a court order not to visit the children, went to a child care facility next door and took his son despite their objections. I was given notice that this had happened and locked a second child inside the school principal's office until the mother arrived to get her. Fortunately, the father did not come to the computer camp, and he surrendered the boy to authorities shortly thereafter. If you are in an area where such incidents would occur with greater frequency, your school may need to provide the camp with the same security during the camp that is maintained during the normal school terms.

Emergency Help

Occasionally there are other emergencies. Medical emergencies are the most common. We are fortunate in having a community clinic next to the school, so medical attention can be secured quickly. The registration forms signed by the children include permission for them to be examined and treated at the local clinic while parents are being contacted, and almost all the children have medical records there as well.

One summer a girl fell from a merry-go-round at the local park, where the children had gone with the recreation leader, and cut open her leg below the knee. The leader took her straight to the clinic, accompanied by a representative from the park. My computer assistant that year was a 20-year-old Yale student, who was in his third year as my assistant, and I turned the computer room over to him. I arrived within a minute or two with the medical slip and relieved the recreation leader. Word travels fast in a tiny community, and the girl's aunt arrived when I did. One of my sponsors made phone calls. Neither parent was at home when we called, but a grandmother took the message. The father was out of town, but the mother was expected home soon. She was flagged down as she passed the general store (this is a *tiny* community) and got to the clinic about fifteen minutes after the accident. She and I drove with the girl to the nearest hospital, where the clinic's dressing was removed, a local sedative was injected, sand was removed from deep within the injury, and thirty sutures closed the wound. On another occasion a boy climbed on a milk crate in the gym, slipped,

and fell, breaking his arm. The doctor at the clinic was able to handle that injury without sending the child on to a hospital. We have also had a mild asthma attack, which the clinic treated without any complications.

The point to all this is that you need an established procedure for emergencies and you need some additional adults when emergencies occur. Although I rarely need them, it is comforting that there is a responsible adult with a telephone in the principal's office, a medical staff next door, a mobile rescue squad from the volunteer fire department within call, and a community full of concerned adults who will drop what they are doing to flag down a mother in her car.

Secretarial Assistance and Bookkeeping

I handle many of my camp's administrative details, but your sponsors' staffs may help you with correspondence, fund raising, publicity releases, copying, answering the phone service and bookkeeping, to name a few services besides those already discussed. You should use your sponsors as often as possible. Not only do they make your job easier, but their efforts will engage their interest in the computer camp and keep them informed about it.

Enrolling Campers

SELECTING AN AUDIENCE

By Age

You must begin by deciding whom you want at your camp. I want the youngest children that I think can handle a keyboard easily, which I have decided is seven years old. I have discussed elsewhere why I use seven years old instead of "entering second grade." You needn't be bound by my decision. The IBM **Writing to Read** program introduces kindergarten students to the keyboard, and there is good preschool software, like **McGee**, that doesn't use the keyboard at all. Other options are simpler keyboards, such as **IntelliKeys** or Sunburst's **Muppet Learning Keys**, or Edmark's **TouchWindow**.

Having decided to begin with 7 year olds, I counted noses and discovered that if I establish an upper age limit of 12, I can take every interested child in my rural region and not exceed my capacity. I don't feel guilty about this, since the 13-year-olds I turn down have already had six years of camp. There are many, many things that a teenager can learn to do at a computer camp, so your upper limit can certainly be higher than mine. In fact, you may choose to start with Middle School children and teach programming.

Your sponsors will be happier in the long run if you begin by deciding your audience and then designing your camp, rather than the reverse.

Other Criteria

Unless you can take everyone in the category you decide to serve, you will have to decide whom to reject, as well. All of the following criteria are arbitrary, but people accept them because they are easy to understand.

You can enroll on a first come, first served basis. Make sure you define "first come" in a manner that avoids the appearance of providing opportunities to insiders before the general public knows about the opportunity. Should you become really successful, you may be treated to the spectacle of people camping out over night to be first in line, as happens for rock concerts.

Private organizations may offer first choice to their own members, then to guests invited by their members, and then to the general public. A computer

camp in a school would usually serve its own students first, but, I suppose a suburban school might sponsor a camp for inner-city kids.

If being inclusive is important to your sponsors, assure that your invitations reach the minority communities that you target and make registration for them as hassle free as possible. Offering to fill out a registration form is a way to avoid embarassment to a parent whose spelling is shaky, and not all poor spellers are members of minorities.

I schedule visits to prospective campers according to where they live. I don't decline to register others, but by choosing where I provide transportation, I control the size and composition of individual camps.

The young relatives of my camp counselors are always welcome to come with them to the camp of their choice.

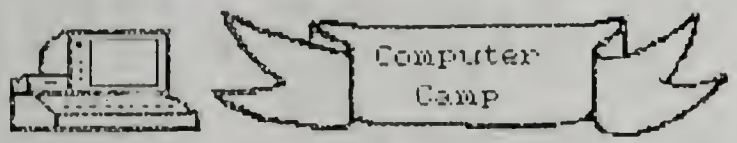
IDENTIFYING CHILDREN

Whom to Serve

I have never had a problem locating children. One year I finished two weeks ahead of time at my usual school, and one of my sponsors asked me to run a computer camp at an empty facility that they had just acquired in another county. I was agreeable, but when I finished my last camp on a Friday, and drove to the new location, I found that nothing had been done to sign up children for the following Monday. Even though we were only going to register two dozen, I was new to the area, and there had never been a summer program there. The director's wife and I decided that we would see what we could do if the first day of camp were delayed until Tuesday morning.

Saturday morning I made a descriptive brochure for the camp, and the director's wife and I took it to the local general store, where we asked permission to leave the brochures on the counter. They said they would be glad to collect registration forms for us. Two women came in for bread and milk, and the director's wife asked them if they had children, and if so, would they like to send them to computer camp. They did, they would, and they thought that a sister's children would like to go as well. By Monday morning we had the names of twenty-three children, many from the extended families of the two women we met in the store. It took all of Monday to find their houses up a dozen Kentucky hollows, but we were able to go and get them for a successful camp beginning Tuesday.

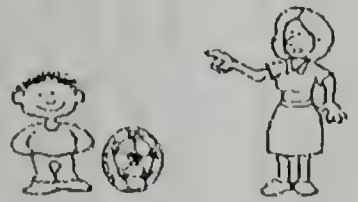
Dessie Scott



Tuesday, August 1 to
Friday, August 11

8:00 to 8:50 Transportation to Dessie Scott
8:50 to 9:00 Snack
9:00 to 10:00 One group will be in the computer room; the other will have crafts and recreation
10:00 to 11:00 Groups switch
11:00 to 12:00 Groups switch again
12:00 to 1:00 Lunch
1:00 to 2:00 Groups switch again
2:00 to 3:00 Transportation home

Children will be under adult supervision at all times. Parents are welcome to visit the camp at any time, although we will not be able to offer you lunch.



Two hours of crafts and recreation daily!

WEEKDAYS ONLY

Transportation is available if you live nearby. Ask when you register your child.

9 AM to 2 PM daily

Two hours each day on the computer!

AWARDS

Children earn points for awards by

- regular attendance
- demonstrating computer skills taught at the camp
- time spent with educational computer programs

LIMIT: 24 Children

Ages 7 to 11 (some 12-year-olds accepted)

COMPUTER CAMP
DESSIE SCOTT CHILDREN'S HOME

Beginning this Tuesday, August 1, and ending Friday, August 11, there will be a computer camp at the Dessie Scott Children's Home for 7 to 11-year-olds from the surrounding community. A few 12-year-olds will be accepted as well. The camp is limited to the first two dozen applicants.

The camp will run weekdays from 9 AM to 2 PM. The camp will provide transportation for as many children as possible. Children are more likely to be transported if they live near the campus and there are other children nearby who will also attend the camp.

Donations (up to $36) are accepted from parents who wish to make them, but the camp is conducted without charge.

Children will receive a snack shortly after they arrive each morning, and a free lunch is provided. There are no vending machines on campus, and children will not need or have the opportunity to use spending money.

Children will spend two hours each day learning computer skills (and playing some games) and two hours in crafts and recreation. Awards are provided at the end of the camp for children who attend regularly and learn basic computer skills taught at the camp.

There will be adult supervision at all times. The computer room is under the direction of Dr. Eric Schonblom, Professor of Engineering at the University of Tennessee at Chattanooga. Eric has been working with children in Perry County since 1973, and this is his fifth year of directing computer camps. Vanessa Stamper, who is directing the recreation program for the second year, is completing her degree in Education and hails from Morris Fork in Breathitt County.

Getting Lists of Names

The advantage we had for the camp I just described is that we were willing to accept any two dozen children from the many children living nearby. It is more difficult when you have fewer children and want to contact all or most of them.

With a public school as a sponsor, I have the names and ages of 80 percent of my children before I start, most of whom either attended the year before or had older siblings who did. Knowing who they are and where they live makes my recruiting task easy. Two dozen of those attending our camp go to an elementary school in the next county. This school is willing to give me a copy of their class rolls, but cannot give me the children's ages or addresses. I know the children who attended in the past, but for those who are starting school or new to the community, I go to the two bus drivers who serve the end of their county near our site, and one of these goes with me to visit homes. Although she must guess children's ages, she knows where they live and frequently knows the parents as well. If a child turns out to be a year too young, we add his or her name to the list for the following year, thank the parents, and go on to the next house.

If you have a school for a sponsor, they will be able to tell you the children's names, and, with teachers' help, ages, addresses, and phone numbers as well. A church sponsor will also have that information about its parishioners. Civic clubs can get family information from their members, and youth organizations usually keep such lists on file.

Contacting Parents

The problem arises when the sponsor is attempting to use the computer camp to reach out into the community and does not have this information. Schools, churches, and other organizations will be less likely to give you names and other information if they are not camp sponsors, but they may permit you to speak to a parents group, leave brochures, or post notices. Notices in places like laundromats and stores are not very successful. My success at the general store in Kentucky grew not out of the posted notice, but through the women contacted personally, who went home to call their sisters and cousins.

In a world of single parents and homes where both parents work, schools have found it harder to involve parents than a generation before, and you will not find many parents present should you attend and speak at meeting of parents and teachers. On the other hand, positive contacts there, like those in the Kentucky general store, may lead to a substantial number of word of mouth contacts. In any event, it does no harm for parents to see camp sponsors in the school settings

Home Visits

The most effective way to enroll children in a computer camp is to go to the home. Look up the child's name before you reach the front door to lend credibility to the statement that you are from the school. When I visit a house, I do not attempt to go inside unless I am invited. This is my message.

> "Hi. I'm Eric. I run the computer camp every summer at the Buckhorn School. I was wondering if Lee would like to go, and you would like to send him (her)? The camp begins Monday. There will be a van to pick Lee up between 8 and 9, and it will return between 2 and 3. The kids get a snack when they arrive, and we feed them lunch at the children's center. They get two hours with the computer and two hours of crafts and recreation every day. The camp runs from Monday through Friday for two weeks. We ask a ten-dollar donation if you want to make it, but we'd like for Lee to attend even if you don't want to make the donation. Here's a piece of paper with the day's schedule. On the back is a form you can tear off and send the first day with phone numbers and medical information. I'll be back this weekend with more specific bus times. What do you think?"

It's easier the second year:

> "Hi. Computer camp starts Monday. Lee is going, isn't he (she)? Here's the form. I'll be back this weekend with the exact time the bus will come by. If you want to make a donation, send it the first day."

There are few parents who do not welcome a chance to have their kids out of the house at a responsible place for two weeks with meals and transportation taken care of, especially for a total cost of ten dollars (or free, when parents don't choose to pay). It's such an easy sell that parents will not believe it's true unless you are there to answer their questions and assure them there are no strings attached.

His mother had asked at the school about computer camp, so I wanted to make sure the family knew the schedule.

The house was forty minutes from the school and isolated. There was no one home and a sign that said "BAD DOG." I stopped the car in the dust close to the front porch and waited. Two small dogs, not much more than puppies, barked continuously, but no one appeared. Finally, I got out of the car, speaking to the dogs as I went. They kept their distance and kept barking, but didn't growl. On the porch an old hound opened its eyes and looked at me without moving.

I climbed the porch steps and tucked the computer camp brochure between the doorknob and the sill. "Are you the bad dog?" I asked the hound, conversationally. It didn't move.

I went slowly back down the steps and walked backwards to the car, facing the still barking dogs. I keep speaking to them, but they were getting louder, and one of them was leaping in the air, coming down on the same spot.

As I opened the car door, the old hound came off the porch in a flash, darted along the car, and bit me on the back of the calf. "Git!" I exclaimed, and slid into the car, glad to get the door shut. The littlest dog was in a frenzy now, floating two feet off the ground, barking and barking. The old hound watched, no longer much interested. I turned the car around and drove off.

The old dog had gotten me pretty good, but I let it bleed clean and dosed it with peroxide. It healed without any difficulty, although there is still a purple spot where the eyetooth dug a little more deeply than the others.

I don't blame the dog. I was fairly warned. There was no sign of life at the house later when the van came for the boy.

HONESTY

Objectives

Not every computer camp has computer literacy or computer-learned skills as its primary objective. A volunteer fire department may wish to teach first aid and fire prevention, a church may wish to evangelize, a youth club may wish to teach swimming, or a hospital may wish to teach about AIDS or sexuality. All of these are laudable purposes if the sponsor makes sure they are stated on home visits and in brochures describing the camp. It is fair to use a computer camp as a carrot to attract children and parents when the sponsor has other objectives. It is only dishonest if those objectives are concealed.

Over the first few years there were some variations in the form we distributed to parents and the information we requested from them. The one now in use is shown here. One third of the page is torn off and returned to us. I usually tear the first half inch when I hand it to the parent. The scheduling information on the torn off page is repeated on the portion kept by the parent.

Liability

Conspicuous by its absence is a "Release from Liability" statement to be signed by the parent. According to the best legal advice available to me, a camp cannot be released from negligence or willful harm to a child. Every accident that occurs at a computer camp could, in hindsight, be prevented. Thus, any and all incidents have an element of negligence. I prefer not to remind parents that I can be sued, and I take every precaution against anything happening that could harm a child or form the basis of a suit. Should we be taken to court, the care we take will be a better defense than any "Release from Liability." Your lawyer may advise you differently. During my ten years as camp director, we have had two serious injuries, described elsewhere, and we paid the medical expenses as a good will gesture in the one case where the child was not insured. Annually, we have cuts, bruises, fevers, stings, and sprains. No one has sued me yet, another reason for frequent, friendly, personal contact with parents.

Record Keeping

I mentioned earlier that when a child at a home is too young for computer camp, we make a note of it for the following year. As a matter of fact, I maintain a database on my computer with the names of past, present, and prospective campers with their ages, grades, and place of residence. Allergies or other health concerns are also included. The database is invaluable in planning recruiting

trips, scheduling buses, and deciding which children should be invited to which camp. Preparation of the database is time consuming the first year, and it is something of a nuisance to go through the school lists adding new enrollees at the beginning of each summer, but it is well worth the time. At the end of the summer, give a copy to your sponsor, sorted by birth date, and suggest they use it to send birthday cards.

In addition to my database is a row of loose leaf notebooks containing the daily records of my camps. Besides being a pleasant place to browse, it provides me with forgotten details about activities and children. I can even retrieve, if I like, each child's performance from past years.

My sponsors maintain records relating to food service, payroll, vehicles, and insurance. There is also a very thin file labelled "Injuries, Accidents, and Incidents." An injury is reported if a child is taken to the clinic or seen by a health professional, or if any medication is given or applied, except at the direction of a parent. An accident is reported if it results in an injury or more than $50 damage to equipment or a vehicle. An incident is any event that a sponsor's director may hear about directly from a state official or a parent.

TUITION AND SCHOLARSHIPS

We come, at length, to the thorny subject of tuition and scholarships. If you are conducting a computer camp for middle class children in an affluent neighborhood, by all means compute your costs and ask parents to pay tuition. Camps are beneficial, cheaper than most child care, and sponsors are entitled to use them to raise funds for other purposes.

About a third of the children who attend my camps are poor by the well publicized Appalachian stereotype. They live in inadequate housing and ride pickup trucks and old cars. At home, though rarely at camp, they wear dirty, worn clothing. If they cannot afford bottled water from the store, they drink bad water. There is less drug abuse, but more alcohol abuse, than in the inner cities. Parents are often unemployed and poorly educated. Corporal punishment is common and sometimes excessive. Children marry too soon and become parents too soon. Much of this is not unique to Appalachia.

Contrary to stereotypes, they are not lazy. There is a strong family structure, with a grandparent in the house or nearby and cousins next door. They

Buckhorn Computer Camp
Summer, 1997

Each computer camp will meet Monday through Friday for two weeks and follow the schedule on the other side of this form. Campers will spend two hours with the computer daily. The remaining time will be spent in crafts, recreation, and other activities. There will be **no** fishing, wading, boating, or other activities on Buckhorn Lake or the Kentucky River. Children will have adult supervision at all times.

Transportation is provided from certain specified areas for each camp. If you prefer to provide your own transportation, your child may attend any camp you choose, if there is room. No child may attend more than one computer camp each summer.

Camp is conducted at the Buckhorn School. There is no charge for the hot lunch there, but a child wishing to buy a snack after lunch must bring money from home. Each child is limited to one pop and one candy bar daily, for which the charge is 50 cents. Unless parents request that change be returned to the child, we apply change to the next day's snack.

For the two-week camp, parents are asked to donate $10 for the first child and $5 for each additional child from the same household; however, there is no charge for computer camp, and children whose parents do not choose to contribute are accepted on the same basis as other children.

Children in Summer School. **Camp I** (Squabble Creek...) Children may attend computer camp and then participate in summer school. **Camp II** (Gay's Creek Ridge...) Children may attend computer camp until summer school starts, after which they may use the computer room for an hour daily during the first two weeks of summer school. **Camp III** (Saul...) Children may use the computer room for one hour daily during all of summer school. **Camp IV** (Feb Fork...) Children may attend computer camp after summer school has ended. **NOTE: Summer school dropouts may not attend computer camp while school is in session.**

Child Care. Children in the child care program of the Family Resource Center may enroll for the first computer camp as long as they attend regularly; however, children may not choose child care on some mornings and computer camp others.

Eric Schonblom, Camp Director
P. O. Box 130, Buckhorn, KY 41721
398-7288

or

Buckhorn Children's Center
1 Buckhorn Lane, Buckhorn, KY 41721
398-7245

CIRCLE CAMP NUMBER: I II III IV

Child's name: Date of birth:

Address: Entering grade _____

Parent/guardian:

Phone(s) - - home: Work:
neighbor:

Allergy or other health concerns:

In an emergency, may the child be taken to the Buckhorn Clinic or the nearest hospital while we are contacting you? ____ yes; ____ no. Each day at 11:15, one child is invited to drive one mile with the camp director to help pick up pop and candy for snacks. May child may do this? ____ yes; ____ no.

Buckhorn Computer Camps, 1997

sponsored by

Buckhorn Lake Area Church;
Buckhorn School;
Buckhorn Children's Center

Camp Schedules

I: Monday, June 2 to Friday, June 13

II: Monday, June 16 to Friday, June 27

III: Monday, June 30 to Friday, July 11, except July 4

IV: Monday, July 14 to Friday, July 25

Open to children aged 7 to 11 on July 1 and to 12-year-olds who attended in 1996

Computers are inclusive. Children from minority groups and children challenged by handicaps are particularly welcome!

TRANSPORTATION

Camp I	June 2 to June 13	Buckhorn Community, Squabble Creek, Otter Creek; Freeman Fork, Rte 315
Camp II	June 16 to June 27	Gay's Creek ridge and campground, Stable Fork; Route 28 in Breathitt County, Long Creek, Jess Branch, Morris Fork
Camp III	June 30 to July 11 except July 4	Leatherwood road, Saul, Couch Branch, Newberry, Mudlick, Andy Branch
Camp IV	July 14 to July 25	Route 28 in Perry County west of Gay's Creek, River Road, Cam Branch, Feb Fork, Miller Branch

After children living in the above areas have been registered, an attempt will be made to accommodate children who live outside these areas and children who wish to attend a camp other than the one for which they are scheduled.

TYPICAL DAILY SCHEDULE

Transportation to school	7:00 to 7:50 AM
Snack	7:50 to 8:00 AM
Changing on the hour: two groups in computer room, one group in recreation, one group in arts and crafts	8:00 to 10:50 AM; noon to 12:50 PM
Lunch and snack	11:00 to 11:50 PM
Transportation home	1:00 to 2:00 PM

don't beg, and they share with their neighbors. They love their children and would sacrifice to send them to a computer camp, because the computer is a symbol of affluence and success.

We don't ask for that sacrifice. In the first couple years I had a bit of a battle with my primary sponsor, who felt that parents who could afford it should pay a fair tuition ($36) for two weeks of computer camp, but I was permitted to offer scholarships in hardship cases. I persuaded the sponsor to drop the ideas of tuition and scholarships, because I was unable to tell who could afford the former and who needed the latter. We compromised on a careful wording that said a donation was requested, but children whose parents did not choose to donate would be registered on the same basis as children whose parents made a donation. There are a few middle class parents in our community, and most of these made the $36-donation. Few of the working poor "who could afford it" did so, and all too many poorer families gave me money when they drew their welfare check. Since 1991 we have asked a $10 donation from the first child in a family and $5 for other children in the household. Our net income hasn't suffered significantly, and even the poorest families aren't hurt now if they make the donation.

I propose our model to you. It does mean that your sponsors will have to bite the bullet and pay the deficit. Fortunately, a computer camp can be run on a shoestring if necessary.

One of the boys lives at the head of a hollow where there are no other children, so he and I have the van to ourselves at the beginning and the end of the day. While we are riding, he tells me about himself. He is the hero of endless adventures, driving four-wheelers where others are afraid to go and rescuing them when they are in difficulties. His first cousin, another camper, appears sometimes as companion, but more often as scapegoat. There was the time, for instance, that my passenger "put five M-12 firecrackers in a water balloon and hit his cousin on the stomach... no, it was the head" with them. I take what he tells me with a grain of salt, and his tales enliven my day.

Publicity

There are four reasons for seeking publicity. It assists the sponsors in raising funds, it is helpful in recruiting campers, it provides recognition to the sponsors, and it provides recognition to the children.

Do not neglect in-house publicity. Sponsoring organizations communicate in meetings, by memos, by posting notices, and by regular newsletters. Use them all. Members of the sponsoring body may have children to send, money to offer, or time to volunteer. Make a point of inviting their children, asking for their money, and publicizing the jobs that need to be done. If the name of the sponsoring organization becomes associated with the camp, its activities will be mentioned to members, or they will be asked questions. They will take more pride in the camp's achievements, and they will certainly answer questions more accurately, if you keep them informed.

Someone at a sponsoring organization answers most of the phone calls and a fair amount of the mail. That person should be particularly well informed. I see that the receptionist at our primary sponsor and the principal's office at our school have copies of our daily schedule, the transportation schedule for all camps, blank registration forms, and a complete list of children with the dates of the camps they will attend, especially if they use our transportation.

My experience with local newspapers is that they will print with few or no revisions anything given to them that is timely, written in newspaper style, and is news. What is news? Newspapers depend upon advertising for much of their income, and they are reluctant to provide free advertising, even to charitable organizations. If I write an article asking parents to call a certain number to enroll their children in computer camp, I am advertising and may not get my notice printed. If I write an article that says that there will be a two-week summer camp beginning the following Monday at the Buckhorn School, and I describe the program and its objectives, that's news, and it will be printed. Furthermore, if you provide a newspaper with real news at the front end of an article, they will rarely remove a paragraph at the end asking people to call the school for further information.

I can usually get the following topics printed as news: the name and location of the camp, the sponsoring organizations, the person in charge, the starting date, the areas where transportation will be provided, and the daily schedule. I don't include all of that in the first article. The fact that the camp is beginning, its time and place, and the people served at the first camp, are information enough for the first article.

The second article needs one or two black and white pictures of kids at computers, a description of the daily program, and vital information about the second camp.

For the remainder of the summer send in an article every two weeks, leading with the names of the children who finished first at the previous camp, adding a word about who is attending camp now, following with one or two more facts about the camp generally, and ending with the time and place of the camp to follow.

After the last camp you feature those children's achievements, recognize sponsors and camp leaders, and promise another camp the following year.

Many newspapers publish a year's chronology on or about New Year's Day. Send a short note to the newspaper suggesting the inclusion of two dates (using my data):

June 2: Thirteenth annual season of computer camps begins at the Buckhorn School with 38 children in attendance.

July 25: Buckhorn computer camps end their thirteenth season with 34 children receiving awards.

Most sponsors have an executive committee or board of directors that meets in the spring of the year. It's an opportunity to get a picture in the paper with a caption such as: "Board at Buckhorn plans Computer Camps." It's too early to advertise the camps, but it's a good opportunity to provide some recognition to a sponsor.

Civic groups and charitable organizations often conduct fund drives. If your sponsor does so, contact the person in charge, offer facts and pictures about camp activities, and suggest the camp be mentioned during the fund raiser.

Transportation

CHOICES

In eastern Kentucky, transportation is the key to success of any program involving children. There are four ways for children to reach a computer camp: they can walk, they can use public transportation, their parents can bring them, or the sponsor can go get them.

A computer camp at a school in the inner city might be able to operate with children walking or using city transportation, because the population is dense and the distances are shorter, but the inner city has its own hazards that will discourage parents from allowing younger children to walk far. In more affluent suburbia, parents are used to taking their children to various activities, and they will get them to a computer camp as well. In depressed rural areas, such as mine, there is a single option: the sponsor must bring the children to the camp.

VEHICLES

The county school board authorized the use of our school for a computer camp after the school's principal asked me to consider moving my embryo camp from a private setting in 1985 to a public one in 1986. During the intervening years leading up to the present, the school has provided a secure computer site, lent us three or four computers each year, and cooperated by identifying students, their ages, and addresses; however, we have only twice used the school for transportation. In the first instance, a school bus driver was hired to drive a van supplied by another sponsor when we brought children from a remote area not previously served by the camp. On a second occasion, spring rains washed out our highway, and I needed the capacity of a school bus to bring the children to one camp that summer. The school and county school board were able to make that happen. I have not had to ask the school and board to do that since. It is not clear to me that the funds to do this would generally be available. If you have a school as a sponsor, you should not assume that buses either will be or will not be available. The situation must be assessed locally.

I will not tell you that you cannot run a successful computer camp without supplying transportation, but I could not do so in my community. If you cannot supply transportation, it is likely that the neediest children will be those denied the opportunity to attend by that factor.

Should your sponsor decide to provide transportation, there are several factors to consider.

DOING IT LEGALLY

First, what vehicles should be used, and where will they be obtained? Several years ago, there was a horrifying accident in Kentucky involving a church bus that was struck by a drunken driver. The church's driver was not at fault, but the bus was overloaded and not equipped with modern safety features, and there was a heavy loss of life. In the wake of that disaster, the Commonwealth of Kentucky enacted much stricter laws regarding the bussing of children both by public and private conveyances. There are similar laws in many states. You should find out what they are in your jurisdiction.

One Kentucky regulation is the requirement for a Commercial Licensed Driver's (CLD) for any vehicle carrying more than 14 children. These licenses are the same as those required of commercial truck drivers, and there are pages of regulations regarding such things as air brakes. A volunteer driver might, but will probably not, have a commercial license. Consequently, you should consider vehicles small enough to avoid their necessity. We drive 9 and 13-passenger vans. If someone offers you a school bus, you will need a licensed driver to go with it, and the easiest place to locate the driver will be the source that offered you the bus.

COORDINATING NEEDS

Some summers we operate the computer camp during the same weeks that the school is having summer sessions. The school and I attempt to avoid sending two different vehicles up the same narrow hollow. Whenever possible we arrange routes so that everyone arrives and leaves at the same time, with the computer campers coming to us and the summer scholars going to their classes.

An alternative we have not explored would be for the computer camp to offset its hours by about 80 minutes from the school schedule. The buses could bring in summer scholars along one route and then follow a different route to arrive later with campers. When school ends, those children would be taken home and the buses would then return to transport the computer camp children. The bus drivers would certainly like the increased work, but the school board might not be enthusiastic about the expenditure.

WHO COMES TO CAMP WHEN?

General Considerations

In scheduling computer camps, I have an advantage denied to the summer school. I don't have to bring all my children simultaneously, so I can schedule my

and so on. Our guidelines say that children can come to any camp if they walk or come with their parents, but the practical result of this is that kids who live near the school, typically, come to the first camp. When a parent brings campers, the parent is usually definite about when they want their kids to attend, which is just as helpful to me in planning bus schedules.

My suggestion is that you start small, with one or two camps drawing on the children living closest. When you and your sponsors are satisfied with the success of the first summer's camping, it is time enough to plan for more camps and a more extensive bus schedule.

Planning

I will explain how I do my planning, not because yours will be the same, but because the steps will be similar. First, I obtain a map of the region on which I mark the locations of all the children. I replace the actual map by a balloon map, such as the one shown here, showing aggregations of children and the number of minutes (not miles) required to bring them to the school.

Important considerations in rural Kentucky are Vacation Bible Schools, which run for a week, or sometimes two, at local churches. Scheduling a bus run to those communities during a Bible School forces children and their parents to make an unnecessary choice, harming both programs. I ask for Bible School schedules ahead of time, and I do not schedule my camps in conflict with them. At Chattanooga, where I taught my college courses, there is an annual Riverbend Festival. No organizer in town is foolish enough to schedule activities that conflict with it. There will be similar events in your community, and it is common sense to avoid them.

You should schedule the children who live around the school to come to the first camp, because those that can walk or ride a bicycle will come to the first one anyway. Having scheduled these, try to go further away for the rest. Consider the later camps. If there are 40 children per camp, and four come with parents, there are still 36 to come by bus. If the two vans together can carry 22 children, it's clear that both vans must make double runs. I try to arrange that no child boards a bus more than an hour before camp starts, and no one arrives at the school more than 30 minutes early. Double runs are easiest if each camp draws from one locality that is far out and another group that is no more than 15 minutes away. It is sometimes a challenge to accomplish this.

If there is to be summer school at my site, there will be children who might have to choose between camp and school, and neither the principal nor the

teachers are happy when this happens, so I make a special effort to invite the summer scholars to attend computer camp either before or after summer school. It surprises me, incidentally, how many children who were forced to attend a month of summer school attend two weeks of computer camp on their own. At any rate, summer school is an important factor to consider in scheduling transportation for camps.

Bus Runs

Although vans may hold 9 and 13 passengers, respectively, I often schedule them to hold 12 and 16. Daily absences give me enough seats, and there is room enough (and seatbelts!) for four smaller kids on a back seat designed for three teenagers. If a 15th kid wants to get on, I arrange for him to ride the other van.

In recent years, both of my sponsors have provided 13-passenger vans. Previous to that, I had one van of each size. The 9-passenger van, being smaller, was scheduled to go to the far end of the route and to take short side trips up and back from the main road. The 13-passenger van kept to the main road and turned around less often. Since the 9-passenger van had the longer route, it followed the 13-passenger van, accommodating the occasional overflow cited above.

My bus schedules are explicit and often accompanied by maps. One such schedule is attached; however, the times on the bus drivers' schedules are three to five minutes after the times that are given to parents.

Better Late... (Much Better)

A point that I made earlier when discussing the recruitment of bus drivers and repeat in the bus driver's job description is that there is no reason for a bus driver to hurry, even if the bus is late. If a bus is a little later than usual, the children will be that much more likely to be waiting in groups, requiring less time for pickups. The temptation to be avoided is to hurry and become too early. A bus that is too early, and leaves a child that is on time, is a bus that isn't where it ought to be. On the other hand, few of my children wear watches, and no one cares much if the bus arrives at the school three minutes behind schedule.

Until 1994, our breakfast snacks were prepared off site, and the last bus stop was to pick up these snacks.

On Site Transportation

From time to time it may be desirable to move the children from one point on the camp site to another or to travel a short distance under supervision. The same precautions for safe transportation are required during such excursions.

Most camps will have lunch at the camp site. From 1986 to 1993 our children had to go 200 yards from the school to a children's center lunchroom across the highway. This was no problem on nice days, when the older children were led from one building to the other by an one adult and two teenagers, while the dozen youngest children were driven in the larger van. On rainy days it took a little longer with both vans making successive trips from one building to the other.

Near the school, but too far for the children to walk safely along the highway, is a public park. We use the park for our last day picnic, described elsewhere, and occasionally the recreation director will take children there on an outing. If all the children can be carried safely in one van, and the recreation director has been approved as a driver, then there are no problems; otherwise, additional supervision is required at the camp site or at the park during the transportation period. The process isn't difficult, but it needs to be considered when such trips are planned.

I can't say it too often: "When transporting children, don't hurry." The odds are good that if you are late, no one will notice.

The van had gone by her house on the way down the hollow, and I had honked as usual. We were returning slowly up the narrow road when she burst from the house, dressed only in panties, and help up her hand to stop us. "Will you wait?" she asked. "Of course," I answered. It took her less than two minutes. At eight years old, she is not yet afflicted with modesty.

Closing the Books

Although the children have gone home, camp is not yet over, and there are still a few things to be done. Let's see what they are.

Money Matters

It is especially important if the sponsor or the camp director is new to the community that the bills be paid promptly. The camp may not be remembered, but if you don't pay your bills, you will be. This is a particularly important consideration if the staff leave town as soon as the camp ends.

Collect what is owed you. The paperwork to collect from the Summer Food Service Program requires much dotting of i's and crossing of t's, but the federal government will pay its bills. It is a little trickier collecting from donors who pledged support of the program, but haven't sent you a check yet. Individuals respond best to a friendly phone call that goes something like this: "This is Ms. Lee at the school. We're very grateful for the support you are giving our summer computer camp, but our bookkeeper can't find your donation in our records. Would you have any idea when you mailed it?" Don't expect to collect every pledge. The longer you wait to ask for and collect donations, the smaller the chance you will get one.

Donations from businesses frequently require an invoice. The person who solicited the donation may not have asked if the donor wanted an invoice. As it happens, asking if an invoice is required is a tactful way to approach a business donor who is a little late.

Say "Thanks!"

One, at least, of the sponsoring organizations should thank donors. If your camp has a formal awards ceremony instead of a last day picnic, the donors' names can be printed in the day's award leaflet and sent to donors afterwards. Print enough of these to have extras to distribute when it comes time to solicit donations the following year.

If you don't want to go to the trouble of an awards ceremony, consider having the children write a camp newsletter, and slip an acknowledgment to sponsors into it.

Keep Your Records

Save your paperwork for at least a year. I keep my camp records, including a daily journal, in a three-ring notebook, and I still have these for camps as far back as 1988. You will not need all of them, unless you are writing a book, but records from the previous year or two are very helpful when you are trying to remember where a child lives, when a church usually has its Bible School, or who donated a printer two years ago and may be ripe for a new request. I am still writing references for a summer aide who helped me in the computer room in 1989.

Return Equipment and Software

Return what you borrow. As it happens, I do not accept software, because children are rough with it – at the camp and at the school – and I don't want to get into an argument about when a disk died, on my watch or theirs. I've accumulated boxes of software a disk at a time, and it is stored by a sponsor in a closet over the winter. Since I write off software purchases on my income tax returns as charitable donations, these disks belong to the sponsor in any case.

I do borrow hardware: computers, monitors, and printers. I use and store my own cords, joysticks, mice, and other small peripherals, but when I upgrade a machine by adding RAM, a fan, or an 80-column card to a computer at the school that sponsors me, I leave the upgrade in the computer, expecting to use it the following summer. It's a way of saying "Thank you" to the teacher whose equipment you are using.

Not every teacher that has a computer in the classroom is a computer expert. When hardware is returned, cables should be reconnected, and the computer readied for use.

One of the reasons I use my own joysticks is their short life expectancy. The rest of the equipment that I borrow stands up pretty well. I have had one school monitor that failed during computer camp, and I paid for its repair. I might have persuaded the school that they should repair "their" equipment when it fails at "their" computer camp, but I wouldn't have persuaded the fourth-grade teacher who let me use "her" computer for the summer. Good relations are worth more than an occasional repair bill.

Leave It Better than You Found It

In our area, school often ends on a Friday, and we may begin the following Monday. The teachers who vacate the rooms we occupy have locked up what is important, but neither the teacher nor the custodian have had an opportunity to clean properly, so we clean for two or three hours before moving in our supplies and equipment. At the end of the camp, we clean again. The old camping rule applies: leave it better than you found it.

Evaluations

If the camp is not a one-time affair, and perhaps if it is, you should try to get an evaluation from participants. The longer you wait after the last day, the harder it will be to get cooperation, and the dimmer memories will be. I interview parents and children, but I ask the others to write out their responses. In many cases, you can start before the camp ends. Here are some things you want to know.

Sponsor. Did the camp meet expectations? Were the costs within reason? Did the sponsor receive adequate recognition? Is the sponsor willing to help with the next year's camp? What changes, if any, are recommended?

Camp Director. What support from sponsors was particularly appreciated? If there were innovations, how did they turn out? Were there problems? What is needed for the following year? What changes are recommended? Were the staff adequate? Should sponsors try to rehire or look for new people? What new hardware or software is needed? Are changes needed in camp organization or schedules?

Adult Leaders. How did the camp correspond to original expectations? Which activities were best received by the kids, and which might be omitted? What new things might be tried? What equipment or supplies are needed to improve the camp? How helpful were the teenaged aides? Should they be rehired the following year, or would it be better to look for someone new?

Junior Counselors. Tell me something you enjoyed about the summer's experience? What wasn't so pleasant? What, in particular, did you learn? Were your supervisors fair and helpful? What changes would you make if you were in charge?

Parents. Do you think the children profitted from the experience? Would you send them again? How did the camp schedule suit you? Is there something different you would like us to try next year?

Campers. What did you like best about camp? What did you like least? If you missed a day, why did you miss? Will you be back next year?

You may go on, if you like, to cooks, custodians, bus drivers, fund raisers, and other people who supported your camp.

I wrote formal reports about the summer's activity after each of my first five camps; however, after that we had settled into an annual routine, and my evaluations were reduced to an occasional memo with a request or suggestion.

CampMaster

INSTRUCTIONS FOR USE

Getting Started

The CAMP.MASTER disk is intended for use by 7 to 12 year old children. It contains a mixture of "bombproof" game-programs which should run without any help at all, educational programs which are intended for use with some live instruction, and utility programs which are on the disk for the convenience of the instructor, but which would seldom be used by campers.

Although a copy with enhanced graphics and sound is available on a 3.5-inch disk for users with an Apple IIGS, the version of CAMP.MASTER on a 5.25-inch disk requires only 48K of memory and will run on any of the Apple II series of computers and compatibles: Apple II+, Apple //e (original or enhanced), Apple //c (original or enhanced), Apple IIGS, Laser 128, Laser 128EX, or Macintosh with a //e emulation card. It requires one disk drive and does not need a color monitor. A utility program is provided to calibrate joysticks, but only one program, a game, requires a joystick. NOTE: the word Apple is a registered trademark of Apple Computer, Inc.

To use the 5.25-inch version of CAMP.MASTER, you must first "boot" the computer. To do this, slide the disk, label side up, into the disk drive and close the disk-drive door. Turn the computer on and the disk will boot itself.

If the computer is already on, you have three permissible alternatives:

- Turn the computer off, wait 10 seconds, and turn it on again.
- Type PR#6 and the ‹Return› key.

• If your computer has an ‹Open-Apple› or ‹Command›key, hold down that key, the ‹Control› key, and the ‹Reset› key simultaneously. When these keys are released the disk drive will usually read the new program. If necessary, repeat this procedure a second time.

Apple IIGS users may use the 3.5-inch disk version by installing System 6, inserting the CAMP.MASTER disk, and clicking on the CAMP.MASTER icon.

Camper Menu

When the CAMP.MASTER disk is booted as described above, a greeting will appear, followed by a menu. In a later section you will be told how to modify the program so that each camper is greeted by name. The menu consists of these items:

```
(A)  ADD'EM
(B)  MAD-LIB
(C)  MONIKERS
(D)  JOBS
(E)  KNOCK-KNOCK
(F)  CALIBRATE JOYSTICK
(G)  SERPENT
(H)  STATIC
(I)  JARGON
(J)  FLOPPY QUIZ
(K)  SYSTEM QUIZ
(L)  EXIT TO CATALOG
(M)  QUIZ
```

Programs on the menu are obtained by typing the appropriate letter, such as C for MONIKERS. To return to the menu, boot the computer again or reset the computer and type RUN HELLO followed by ‹Return›.

ADD'EM

ADD'EM is one of several programs intended to give campers something to

do as soon as they enter the computer room. When the program is chosen, the words

USE DEFAULT VALUES?

will appear on the screen.

Using Default Values

If the default question is answered with Y (for yes), the screen is cleared and a simple arithmetic equation such as

4 + 7 =

is provided. Campers have as long as they need to type in an answer followed by the <Return> key. If the answer is wrong, a message appears saying

TRY AGAIN..

This message recurs until the correct answer is given. No points are given for answers unless the question is answered correctly the first time; however, a correct answer is always acknowledged with a phrase such as RIGHT ON! As soon as a correct answer has been obtained, a new expression appears.

Campers who answer correctly on the first try are rewarded with a continuously increasing score on the right hand side of the screen. Intermittently, a correct answer will also produce a series of beeps and WOWs, one for each correct answer up to that point.

The program may be exited at any time by entering the letter Q (for quit) as an answer to a problem. This returns the student to the camper menu.

Program without Using Default Values

If the equation question regarding defaults is answered with N (for no), the words LOWEST NUMBER will appear on the screen. The camper or teacher answers

this by typing the smallest number which is to be used in an arithmetic expression. Next, the message HIGHEST NUMBER appears. This question is answered by typing in the largest number which the camper is to see. Finally, the request HIGHEST PERMISSIBLE VALUE FOR THE SMALLER OF THE TWO NUMBERS is posed. If this query is not answered with the same number given in the previous question, then a limit is placed on how large the smaller of the two numbers can be.

When larger numbers are chosen, the campers will see the problems expressed in the form

```
  99
+ 12
 ---
```

rather than

```
99 + 12 =
```

as before. In all other respects the program runs exactly the same as when the default values for the numbers are used.

Programmers. Should a teacher wish to make the program more challenging, he or she can list the program and change the + (plus sign) in line 130 by * (asterisk) and the + in lines 90 and 510 by X (letter X). This change converts all of the problems from addition to multiplication. While the program is in memory, type

```
SAVE TIMES EM
```

So that the program **TIMES.EM** can be reached from the menu, reset the computer, type

```
LOAD HELLO
```

and list it. Change ADD EM in line 410 to TIMES.EM, and change ADD'EM in line 600 to TIMES'EM. Then type

```
UNLOCK HELLO
SAVE HELLO
LOCK HELLO
```

MAD-LIB

In MAD-LIB the camper answers a series of questions. The computer inserts the answers in a nearly-familiar children's story. The results are best if prepositions are avoided (*i.e.*, BEDROOM is a better answer than IN THE BEDROOM).

When the story has been printed, the computer will ask

```
PLAY AGAIN (Y/N)?
```

and if the camper answers Y (for yes), the program is repeated; otherwise, the computer returns to the camper menu.

Although it is intended for entertainment, MAD-LIB provides some typing and reading practice and is good for many repetitions during a typical computer camp.

Incidentally, if you enjoyed MAD-LIB, be sure to try the instructions to REDUX after you QUIT TO CATALOG.

MONIKERS

MONIKERS is a simple game to engage the camper's interest at times when he or she cannot receive individual attention. Although it provides a small amount of practice in reading and typing, it is intended for recreation.

When the program is chosen, the screen is cleared and the question

```
HOW MANY PLAYERS (2 to 7)?
```

is asked. Campers quickly discover that this number need not be the same as the number of children using the computer. Once a number has been typed, the camper is asked

```
NAME OF PLAYER 1
```

After this name is typed, the names of the remaining players are requested in turn. When all of the names have been entered, the screen is cleared and the names race across the screen to a finish line, where the winner is identified. The camper is then asked

```
PLAY AGAIN (Y/N)?
```

If the camper answers N (for no), the computer returns to the camper menu. If the answer is Y (for yes), the question

```
SAME NAMES (Y/N)?
```

is asked. If the answer is Y there is a new race. If the answer is N, the program returns to the beginning to ask for the number of players again.

JOBS

Children have unreal expectations about occupations. This program provides some realism. It is based upon a list created by the *Jobs Rated Almanac* some years ago and reprinted in several newspapers. Factors considered include salaries, job stress, working conditions, outlook, security, and physical demands. As the introductory screen explains:

```
      YOU WILL BE GIVEN THREE JOBS FROM
THEIR LIST.  YOU ARE TO TRY TO PUT THEM
IN ORDER, BEGINNING WITH THE BEST.
```

The next screen would show three occupations in random order. For example:

```
JOBS ARE

     (A)  METEOROLOGIST
     (B)  NEWSCASTER
     (C)  INSURANCE UNDERWRITER

WHICH IS BEST (A, B, OR C)?
```

After guessing which job of the three is the best, the camper must then decide which is worst. Suppose the estimate is that meteorologists have the best job and newscasters the worst. The next screen would report the actuality:

```
SORRY
THEIR RANKINGS ARE.

24   INSURANCE UNDERWRITER
34   METEOROLOGIST
95   NEWSCASTER

TRY AGAIN (Y/N)?
```

A camper who chooses Y (for yes) is presented with three new occupations; otherwise, the child is returned to the main menu.

KNOCK-KNOCK

No surprises here. When this option is chosen, the computer beeps twice and presents the words

```
KNOCK! KNOCK!
```

The child types

```
WHO'S THERE?
```

and is answered by (say)

```
GRAMMAR
```

The response, of course, is

```
GRAMMAR WHO?
```

for which the punch line is

```
GRAMMAR WHOM!

ANOTHER VISITOR (Y/N)?
```

If the camper wants another, he has only to answer Y (for yes); otherwise, he or she is returned to the menu.

CALIBRATE JOYSTICK

CALIBRATE JOYSTICK is a utility program to make it easier to calibrate joysticks. If the joystick is still in its box, checking that the light on the disk drive is off, turn off the computer, and install the joystick according to the computer manual. Unless you have a very old joystick or an Apple][+, this is as simple as plugging the cord into the proper connector in the back of the computer. Turn the computer back on and wait for the camper menu to appear. When CALIBRATE JOYSTICK is chosen, the message

```
TRY THE JOYSTICK BUTTONS...
```

will appear. Press each button in turn, and you should be greeted with the messages

```
BUTTON #0 WORKS
BUTTON #1 WORKS

REPEAT TEST (Y/N)?
```

If you did not have time to press both buttons, press Y (for yes) and try again. If either button does not work, replace the joystick or read the joystick

instructions to make sure it is installed correctly. If both buttons work properly, then reply N (for no) to receive the instructions

```
     TWO COLUMNS OF NUMBERS WILL APPEAR
ON THE SCREEN    ADJUST THE JOYSTICK SO
THAT EACH NUMBER IS BETWEEN -10 AND 10.

PUSH ANY KEY TO CONTINUE
```

As promised, two numbers will be printed repeadedly side by side on the screen. For example, you may see:

```
28          -13
28          -13              PUSH
27          -13             BUTTON
28          -13               TO
28          -12              QUIT
28          -13
```

and so on. Pick up the joystick and locate the controls (slide switches, knurled knobs, or set screws) which are used for calibration. Making sure that the joystick is in the neutral (center) position, turn one of the controls while watching the numbers on the screen. The numbers in one column will begin to increase or decrease, depending on the direction you move the control. Move it back and forth until the number in the affected column is as close to zero as possible. The more expensive the joystick, the easier it will be to calibrate. For most purposes, numbers between -10 and +10 are acceptable.

Repeat the process with the other control.

To confirm the calibration, release the control and move the joystick all the way forward and all the way to the rear. The number in the left-hand column should read -127 at one extreme and 128 at the other. Now move the joystick all the way to the left and all the way to the right. In this case, the number in the right-hand column should read -127 at one extreme and or 128 at the other. Some cheaper joysticks will not permit this to be done, and you may have trouble using such joysticks to reach the peripheries of the screen. If either control reads 128 continuously, no matter what is done with the calibration control and

joystick, a wire in the cord has broken and must be replaced. This is a much commoner error than failures in the mechanics of the joystick itself.

This completes the calibration procedure. To stop the program, push either button, and you will be returned to the menu.

SERPENT

SERPENT is a public domain game that has been around for a number of years. The child is asked

```
WHAT IS YOUR AGE?
```

After this is provided, the screen is cleared to show a rectangle with two small squares in it. Underneath is a starting score based on the child's age: the younger the child, the larger the head start. If the child touches the left arrow key (←), the square moves to the left leaving a solid line as a trail behind it. The other arrow key, naturally, moves the square to the right. Keys handier for the left hand, A and Z, move the square up and down, respectively. The problem is that the square only continues to move as long as it does not contact itself or the border of the rectangle. There is a bonus if the moving square runs into the second square, which remains in place for a while and then jumps randomly to another spot in the rectangle; nevertheless, the optimum strategy is to form an inward spiral. From time to time the line streaming out behind the moving square changes color, and there is a bonus for remaining alive for fifteen color changes.

There is the usual opportunity to PLAY AGAIN (Y/N)?

STATIC

When STATIC is chosen, the screen is filled with a random pattern and a sound similar to radio static is heard. When any key is pressed, the computer returns to the camper menu. STATIC is a "machine language" program that will be used in the discussion following the EXIT TO CATALOG option to demonstrate the BRUN command.

JARGON

JARGON is the first of several programs intended to teach basic elements of computer literacy. When JARGON is selected, the camper is told

```
THIS PROGRAM WILL TEACH YOU THE
DIFFERENT PARTS OF A COMPUTER SYSTEM
```

after which a typical computer setup is shown on the graphics screen. One part of the system (the printer) is labelled. Each time a key is pressed, the label moves from one component to another until each part of the system has been named twice.

After this demonstration the names of the components are replaced by the letters A through H in random order. The computer chooses one component, again in random order, and asks, for example,

```
WHICH IS THE FLOPPY DISK?
```

The camper replies by choosing one of the letters. If the choice is correct the computer responds with

```
VERY GOOD!      SCORE  1
```

If the choice is wrong, the computer responds

```
SORRY, TRY AGAIN
```

The score increases each time the camper answers correctly on the first try. After identification of all eight components has been requested, the computer examines the camper's score. If any components were missed, the response is

```
YOU NEED SOME MORE PRACTICE
DO YOU WANT TO TRY AGAIN (Y/N)?
```

A Y (for yes) leads to the program running again with a renewed random

presentation of the labels. A N (for no) returns the computer to the camper menu.

When the camper has succeeded in naming all eight components correctly, the computer displays the message

```
A PERFECT SCORE!  YOU DID IT!
DO YOU WANT TO TRY AGAIN (Y/N)?
```

Although the program offers the option here of practicing further or returning to the camper menu, it is recommended that a perfect score be followed by an oral exam, in which the instructor points to each component (the real component, not its picture) in turn and asks: "What is this?" A camper who can name all eight components is credited with passing the nomenclature portion of the camp's objectives and may be rewarded with the opportunity of playing a computer game. In ten years of teaching the camp to economically deprived youngsters, I have found only four 7-year-olds who could not master the names. I accept either "monitor" or "CRT" as a correct answer for the display device.

FLOPPY QUIZ

Although the care and use of floppy disks cannot be taught without actual demonstrations, it is helpful to have a computer program to drill the campers on ways in which disks can be damaged. When **FLOPPY QUIZ** is selected, the instructions are:

```
     A NUMBER OF DIFFERENT WORDS WILL
APPEAR ON THE SCREEN.  ANSWER 'Y' FOR
EACH THING WHICH CAN DAMAGE A FLOPPY
DISK.  ANSWER 'N' FOR EVERYTHING WHICH
CAN'T DO ANY HARM.
```

Once the camper presses a key to indicate that the message has been read, a word such as

```
HEAT
```

will appear on the screen. Pressing an N (no, heat will not harm a disk) has no effect. The word HEAT remains on the screen. The correct answer, Y (yes, heat will harm a disk) causes the next word to appear.

The additional words, which occur in random order, are

```
LIGHT
DUST
SMOKE
BENDING
STANDING ON EDGE
STACKING IN ENVELOPES
MAGNETS
```

Of these eight terms, all are harmful except STANDING..., STACKING..., and LIGHT. A large stack, in which the weight on the bottom disk is significant, could be harmful, but it's is better to have campers stacking disks in envelopes than to have them scattering the disks over every available horizontal surface.

If the response to all eight terms is not correct, the process is completed. Once eight correct responses are obtained, the message

```
PERFECT SCORE!
```

is displayed. Next, campers receive the message

```
IF YOU WANT TO WRITE ON A FLOPPY
DISK, IT'S BAD TO USE
```

followed by the words, arranged randomly,

```
PENCIL
MARKER
BALLPOINT PEN
```

For each word, the camper must again respond with a Y (ok to use) or N (not ok to use). Once a label has been attached to a floppy disk, one should write

on it only with a soft marker. Pencils and ballpoint pens are too hard and can leave an impression on the disk.

A student who answers these three terms correctly receives the message

```
PERFECT SCORE!

ASK THE INSTRUCTOR TO GIVE YOU YOUR TEST
```

If the instructor responds by typing the password

```
JOY
```

the program returns to the beginning. The instructor should watch while the student responds to all eight of the original terms and to the three writing implements. A successful camper should be credited with passing this portion of the course and be rewarded by being allowed to play **MONIKERS**, **SERPENT**, or **MAD-LIB**.

Seven-year-olds show no great difficulty in answering these questions. To return to the camper menu, type Q (for quit).

SYSTEM QUIZ

Of the several quizzes on this disk, this is the only one which young children do not master easily; therefore, a perfect score is not required.

```
BEEPS SPEAKER              (1) LIST
CLEARS THE SCREEN          (2) RUN
RUNS AN A-PROGRAM          (3) CTRL-S
RESETS COMPUTER            (4) CTRL-G
SUSPENDS PROGRAM           (5) BRUN
SHOWS THE PROGRAM LINES    (6) HOME
RUNS A B-PROGRAM           (7) CATALOG
SHOWS PROGRAMS ON DISK     (8) CTRL-RESET

TYPE 'Q' TO QUIT
```

When **SYSTEM QUIZ** is selected, the functions and commands above are displayed in random order:

The system cursor begins just to the left of the first line (BEEPS SPEAKER). The camper looks down the list of commands and chooses a number from 1 to 8. If the choice is correct (CTRL-G), the computer beeps once and places an asterisk * to the left of the function. If the pairing is incorrect, no beep is heard and the cursor moves down to the next item.

If the camper does not pair all eight items correctly, then the words

PLEASE TRY AGAIN

are displayed, and the cursor is moved back to the upper left corner of the screen. The order of the functions and the commands is unchanged.

If a camper is having difficulty deciding the use of a particular command, he or she can simply enter the number of the command repeatedly until an asterisk appears. Example: Viewing the screen display above, a camper wonders about the use of the command CTRL-S (or Control-S). The number in front of CTRL-S is (3). If the camper hits the key 3 several times, a beep will be heard, and the asterisk will appear in the fifth line ahead of the words

SUSPENDS PROGRAM .

When all eight functions and commands have been paired, the computer display will read

YOU HAVE A PERFECT SCORE ASK THE INSTRUCTOR TO GIVE YOU YOUR TEST

The camper summons an instructor who types the password JOY to cause the computer to scramble the functions and commands into a new order and to display them again. The student then proceeds as before and is given a score equal to the number of correct answers. A child who takes the test should be rewarded with the opportunity to play **MAD-LIB**, **SERPENT**, or **MONIKERS**.

Older children will be able to pass this test, but younger children will become frustrated trying to make a perfect score. I let children take notes (a useful skill) while they are learning the commands and consult those notes when being tested.

Campers can return to the camper menu at any time by typing Q (for quit).

EXIT TO CATALOG

The choice **EXIT TO CATALOG** does not run a computer program. Instead, the screen is cleared, the menu program is removed from memory, and a list of all of the computer programs on the disk is displayed on the screen. This option is intended to introduce campers to the Apple's operating system and to give them some simple trouble-shooting skills.

NOTE: Operating system commands, such as RUN or CATALOG, are executed by typing the word and then pressing the ‹Return› key. If nothing seems to be happening and the disk-drive light is not on, it is frequently a good idea to try the ‹Return› key.

Here is a typical catalog display (although there is only one column on the screen):

```
CAMP MASTER

*A 006 ADD.EM                T 002 NAMEF
*A 004 CAL.JOYSTICK         *A 002 NEW.NAME
*A 051 CIVIL                *A 042 PREPARE.STORY
*A 023 DETECTIVES           *A 002 READ.FILE
*A 007 FLOPPY QUIZ          *T 002 REDUX
*A 006 HELLO                *A 002 REDUX.ORIG
*A 008 JARGON               *A 005 SERPENT
*A 028 JOBS                 *B 002 STATIC
*A 016 KNOCK.KNOCK          *B 033 SYSTEM.PIC
*A 003 LOCAL                *A 007 SYSTEM.QUIZ
*A 013 MAD.LIB               T 002 TOWN
*A 002 MENU                 *A 004 TYPE.I
*A 005 MONIKERS
```

The catalog can be obtained at any time that a program is not running by typing

```
CATALOG
```

Try it!

Under the old Apple II disk operating system, DOS 3.3, programs were of three types: A - Applesoft files; B - binary files; T - text files. There are still a great many DOS 3.3 files in the public domain, and the A, B, and T file types are retained under subsequent Apple II operating systems, ProDOS and GS/OS, although additional file types have been added.

Applesoft Files

Applesoft, a dialect of **BASIC**, is the computer language which resides in every Apple II computer. **Applesoft** files are designated by the letter A in the list of programs. The number which follows the A is an indication of the program's length. An asterisk (*) in front of the A indicates that the program is locked and cannot be modified accidentally.

Examining a Program. To examine an Applesoft program such as DETECTIVES, you must first place it in memory. This is done by typing the command

```
LOAD DETECTIVES
```

The program can be examined by typing

```
LIST
```

A long program listing can be halted momentarily by a CTRL-S command: holding down the ‹Control› key while typing the letter S. Hitting any other key subsequently will cause the listing to resume. It is rarely necessary for campers to examine a program listing; however, they may do so out of curiosity or out of a wish to change the program under supervision.

Running, Breaking, Resetting, or Stopping a Program. To run a program such as MONIKERS, simply type

```
RUN MONIKERS
```

and the computer will load the program into memory and then execute it. A program which is already in memory can be run by typing the single word

```
RUN
```

An Applesoft program can often be interrupted ("broken into") by holding down the <Control> key and typing the letter C. This "break command" is designated by CTRL-C. Unless the program has disabled the break command, execution will cease with the message

```
BREAK IN LINE 1235
```

In some, but not all cases, execution will be resumed if one types

```
GO TO 1235
```

In any case, the command

```
RUN
```

will cause the program to be run again.

If a program is running and will not break when the sequence CTRL-C <Return> is pressed, then it may be necessary to reset the computer by holding down the <Control> key and then pressing the <Reset> key as well. Most program execution is terminated by this action.

An even more drastic, but foolproof, method of stopping a program is to turn off the computer.

CAUTION: DO NOT turn off the computer if there is a disk in the disk drive and the disk drive light is on.

After turning the computer off, you should wait for ten seconds before turning it on again.

Binary Files

Binary files are designated by the letter B. Among other things, a binary file can be a collection of data, a computer program written in "machine language," or a stored graphic image. There is no way to distinguish binary files from a catalog listing.

Loading a Binary File. Examine the CATALOG listing for **CAMP.MASTER** and you will discover a file labelled

```
*B 033 SYSTEM.PIC
```

While it is not impossible that this is a data cache or a machine-language program, the size of the file, 33 records, is exactly what is needed to store a full-screen picture in **DOS 3.3** high-resolution graphics. Most 33-record files are graphic files. To confirm that this is the case, type the following command:

```
HGR2 : BLOAD SYSTEM.PIC
```

The command HGR2 clears the screen for a graphic display, while the BLOAD command causes the file **SYSTEM.PIC** to be loaded in memory. As the file is loaded, the computer will display the picture on the screen.

To clear the picture from the screen, type the word

```
TEXT
```

CTRL-RESET will also clear the screen. If you attempt the same procedure with

```
HGR2 : BLOAD STATIC ,
```

a new picture will not appear. Clearly **STATIC** is not a graphic display. Use TEXT or CTRL-RESET to return to the text screen.

Running a Binary Program. Although STATIC is not a graphic display, it is a binary program. You can confirm this by typing

```
BRUN STATIC
```

While STATIC is running, touching any key will return you to the text screen and run whatever **Applesoft** program is in memory. If there is no program in memory, it will simply return you to the text screen.

It is not necessary to BLOAD a program before typing BRUN.

If a B-file does not produce a useful result with either BLOAD or BRUN, then either it is a data file, or it is a machine language file which is used by another program.

Text Files

A text file, designated by the letter T, is either a data file or an executable file. The catalog listing is no help in making this distinction. For example, try the command

```
EXEC NAMEF
```

and you will receive an error message. On the other hand, the command

```
EXEC REDUX
```

leads to the execution of a brand-new **MAD-LIB** program, after which you are returned to the camper menu. The creation of executable files is a task for programmers, but even a non-programmer can find out the contents of **REDUX** by listing **REDUX.ORIG**, the program that was run to create it.

QUIT

The QUIT option, like EXIT TO CATALOG, does not cause a program to be executed. Instead, the current program is cleared from memory, and the computer waits for you do tell it what to do next.

Other Programs

After booting the CAMP.MASTER disk, again choose

```
(H)  EXIT TO CATALOG
```

from the menu. In addition to the programs listed on the menu or discussed under EXIT TO CATALOG earlier, the CAMP.MASTER disk includes the following files:

```
*A 055 CIVIL                *A 029 PREPARE STORY
*A 023 DETECTIVES           *A 002 READ.FILES
 T 002 HOW                   T 011 SOURCE
 T 002 HOWZIT                T 002 TIMES
*A 003 LOCAL                 T 002 TOWN
*A 002 MENU                 *A 004 TYPE.IT
 T 002 NAMEF                 T 002 WHO
*A 002 NEW NAME              T 002 WHY
              T 002 WHYZIT
```

CIVIL

CIVIL is a civil war simulation in which one or two campers play the part of generals in any of 14 civil war battles. After an introductory sentence describing the battle, each general is told the total resources at his or her command and asked how many dollars should be spent for food, for salaries, and for ammunition. The general must also choose a general battle strategy (such as "frontal attack." The computer than analyzes the strategies, calculates who the winner would be based upon historical factors, and reports the number of actual and calculated casualties.

To run the program, simply type

```
RUN CIVIL
```

The program is self-explanatory, so it is not described in further detail here. CIVIL is included on CAMP.MASTER as an example of a very large number

of programs in the public domain available at low cost. This particular program came with a dozen others on one $5-disk. Although that particular supplier is out of business, other public domain supply houses are listed in the section entitled **Sources for Computer Programs**.

NEW.NAME / NAMEF

You will have noted that when the computer is first turned on, a message appears, which begins:

```
HI, CAMPER...
```

The program **NEW.NAME** is intended to personalize the disk by replacing the word CAMPER with the camper's name. To achieve this, type

```
RUN NEW.NAME
```

The screen is cleared and the question appears:

```
WHAT IS YOUR NAME?
?
```

The camper types in his or her name followed by ‹Return›. The name is stored on the computer disk in file **NAMEF**. From this point on, the disk will greet the camper by name when the computer is booted.

The person running the computer camp has the option of placing individual names on disks before the first day of camp or of letting the campers enter their own names. In any case, each disk should be labelled (using a marker, not a pencil or ballpoint pen) with the child's name.

LOCAL / TOWN

LOCAL should be run by the camp sponsors before the disk is duplicated for distribution to campers. It asks for the name of a local town or village with an unusual name for inclusion in the program MAD-LIB. All the user must do is

type the name; the programs on the disk do the rest. If a town name is not entered by the sponsor, the name HOLLYWOOD will be used instead. The name is stored in the file TOWN.

MENU

When campers get bored with what they are doing or run into a computer error, they may want to get back to the menu without having to turn off the computer. This can be done by resetting the computer, typing

```
RUN MENU
```

and hitting the ‹Return› key. Strictly speaking, there is no need for the program MENU. The same result can be obtained by typing

```
RUN HELLO
```

but it is easier to remember MENU than HELLO. In fact, all MENU does is to run HELLO.

THE DETECTIVES SHELL

DETECTIVES is an example of what *Tom Snyder Publications* calls groupware, a program designed to be used by a class, rather than an individual, under the direct supervision of a teacher. Because a teacher is required, the program cannot be accessed directly from the menu. DETECTIVES is particularly well suited for reviewing passages from the Bible, but it can also be used to teach reading comprehension, as illustrated here. Even when used to teach religion, the program has no point of view. That is supplied by the teacher. All the program does is to provide an entertaining mechanism for presenting a written passage for analysis and interpretation.

DETECTIVES is designed for use by as many as eight or ten students aged seven to twelve. A "case" can be solved in 20 to 40 minutes, depending upon the length of the passage being studied. Children participate eagerly unless there are more exciting alternatives nearby.

The program set consists of the main program (DETECTIVES), a program used to type in the quotation, questions, and answers (PREPARE.STORY), and the seven text files where the typed information is stored (HOW, HOWZIT, SOURCE, TIMES, WHO, WHY, and WHYZIT). Users need not concern themselves with the text files, which are written to and read automatically.

Playing Detective

An Overview. After the campers have typed in their names, the computer displays a screen which says

```
CATEGORIES

(A) WHO
(B) WHERE
(C) WHEN
(D) WHY
(E) HOW

LEE, WHICH CATEGORY?
```

One of the campers, Lee in the above case, is chosen randomly by the computer and asked what sort of question to answer. Assume Lee answers with C. The computer first reports that there are 12 facts, say, collected about this particular case and asked which fact to review. Lee chooses a number from 1 to 12, that fact is printed on the screen, and the computer poses a WHEN question, beginning WHAT HAPPENED WHEN... If Lee answers to the satisfaction of the instructor, the question is deleted; otherwise, it will be asked again the next time a WHEN question is requested.

Since little of the story is known at first, few questions can be answered correctly; however, as more facts are displayed on the screen, answers become easier. By the end of the session, most of the group can summarize everything of importance in the quotation.

It is usual, especially at first, when answers are coming slowly, for the group to wait for an answer from the student whose name appears on the screen,

but as the story unfolds, and children become involved, one camper after another begins to chime in with answers. Consequently, duller students are not embarrased if they answer slowly, and brighter children don't get bored when their name is not on the screen.

The source of thequotation, the passage that is used, the questions asked, and the answers that are accepted are all chosen by the teacher.

Getting Started. The screen should be set up against a wall so the children will not be distracted by other activities as they sit facing it. The keyboard should be at the side within reach of most of the students. It helps to have a place in the background to list the numbers of the facts that have been read.

Place the disk in the disk drive and turn on the computer. From the menu, choose

(M) QUIT

When the cursor appears, type

RUN DETECTIVES

and press ‹Return›. The message on the screen will be

HOW MANY DETECTIVES?

Respond by typing in the number of children. If there is any likelihood of a late arrival, use the number of children plus one. As in MONIKERS, the computer will ask for the names of the children. Have them type their names individually in turn. The order does not matter. If a latecomer is possible, type ANYONE as the last name. Should a latecomer arrive, instruct him or her to answer questions addressed to ANYONE ; otherwise, anyone may respond.

After the names have been entered, the computer will list the names and ask

```
ARE THESE CORRECT (Y/N)?
```

If their is an error, an answer of N (for no) will allow the names to be entered again; otherwise, as in **MONIKERS**, the names will race across the screen, setting an entertainment mood. After striking any key, the teacher should explain the game to the children during the delay while the computer transfers data from the game disk to the computer's memory.

Choosing a Category. When the data are loaded, the category list will appear on the screen

```
CATEGORIES

(A) WHO
(B) WHERE
(C) WHEN
(D) WHY
(E) HOW

LEE, WHICH CATEGORY?
```

If children have failed recently to answer, say, a WHERE question, the teacher should discourage selection of that category; otherwise the child may choose freely. Let us assume that Lee chooses (A) WHO. Lee, or a designated keyboard operator, types A on the keyboard.

Exploring Events. As soon as the category is chosen, a message will appear on the screen. For example,

```
     ACCORDING TO THE RECORD,
AS RECORDED IN THE APOCRYPHA,
17 EVENTS ARE RECORDED

WHICH EVENT DO YOU WANT TO INVESTIGATE
NOW (1 - 17). ?
```

Assume Lee enters the number 13. The message will be...

```
RECORD FOLLOWS

EARLY IN THE MORNING THE KING ROSE AND
CAME, AND DANIEL WITH HIM.  THE KING
SAID, "ARE THE SEALS UNBROKEN, DANIEL?"
HE ANSWERED, "THEY ARE UNBROKEN, O
KING "

READY FOR YOUR QUESTION (Y/N)?
```

The instructor should write the number 13 on an easel or piece of cardboard, so children can tell that clue 13 has already been chosen. The instructor, Lee, or another child chould read the clue aloud.

Answering Questions. When Lee is ready, any key except N is pressed to obtain the question:

```
     THERE WERE 4 PERSONS INVOLVED IN
THIS STORY.  WHAT PART WAS PLAYED BY
PRIESTS?
```

Lee answers by speaking, rather than by typing the reply into the computer, and the instructor evaluates the response. Following any keypress, the screen will read

```
     TEACHER, IS THAT AN ACCEPTABLE
ANSWER (Y/N)?
```

The instructor answers either Y, to delete that question from the question set, or N, in which case the same question will be asked the next time the WHO category is chosen. Unless children are lucky about the clues they choose, they will be unable to answer the first few questions. To avoid embarrassment to these campers, the instructor should say something like: "We don't know enough yet, do we?"

The two interpretive categories, WHY and HOW, are set up so that an answer appears on the screen after the instructor accepts a correct reply. This allows the instructor to add additional interpretation if it is needed.

Continuing the Game. After Lee has responded, the computer will list the categories again and ask another camper to choose. When all of the questions in a given category have been answered correctly, that category will no longer appear on the category menu.

When the last question has been answered in the last category, the computer will congratulate the detectives for solving their case.

Preparing the Story

Creating Your Own Story. The story on the **CAMP.MASTER** disk comes from the chapter titled *Bel and the Dragon* in "The Apocrypha" and has been identified as the world's oldest detective story; however, you will want to write your own. The program **PREPARE.STORY** allows you to do so.

You will need a poem of about 200 words or a narrative passage up to 300 words in length. Select something unfamiliar. **DETECTIVES** is better adapted for new stories than old ones. It is also important to choose passages in which there is action. Solving the case centers on what happened. What was said is important only for the light it throws on events.

Boot **CAMPER.MASTER** and choose QUIT from the menu. Then type

```
RUN PREPARE.STORY
```

and press ‹Return›.

Entering the Story. The longer the story, the longer it will take to complete the game; however, the program imposes no limit on the story's length. **PREPARE.STORY** begins with the story's source. The screen will ask

```
                THE SOURCE
GIVE THE LITERARY SOURCE FOR THE STORY
TITLE:
```

In this instance, the book's title, THE APOCRYPHA ‹Return›, is typed, prompting the next request:

```
CHAPTER
```

If, as in this case, the chapter has a title, then it should be entered: BEL AND THE DRAGON; however, a passage from the *Aenead* might call for a Roman number, such as IV, while a quotation from Austens' *Pride and Prejudice* might use a simple Arabic number like 23. It is doubtful the children will notice in any case.

Next, the program will want to know the way the quotation is identified within the source:

```
DESIGNATOR (e.g  PAGE, LINE, VERSE...),
IF ANY
```

For Jane Austen, one would enter PAGE. For Shakespeare and many other poets, one would enter LINE, while sources like the Bible would require the word VERSE. The program will accept other words, like SECTION as well. Suppose we enter LINE for *Bel and the Dragon* to elicit this response:

```
LINE  LISTING
      DO YOU SKIP ANY LINES (Y/N)?
```

You may be using a continuous passage without omissions, but it is often desirable to reduce the length of the quotation by eliminating lines that are repetitive or extraneous to the story. If so, reply with Y to be asked in turn

```
HOW MANY GROUPS OF LINES ARE THERE
```

Removing some unnecessary lines from *Bel and the Dragon* leaves the remaining story in three pieces. The reply 4 produces the further inquiry:

```
FOR GROUP #1
FIRST LINE NUMBER IS
```

After entering 2 for this question and 4 for the subsequent question,

```
LAST LINE NUMBER IS
```

the user is taken on to the second, third, and fourth groups of lines. Should a group consists of a single line, say line 42, simply answer both line number requests with that number: 42. The process concludes with a summary that also provides an opportunity to correct errors by repeating the entries:

```
REF: "THE APOCRYPHA"
CHAPTER: BEL AND THE DRAGON
LINE(S): 2-4, 6-7, 10-12, 14-21

RIGHT (Y/N)?
```

The computer provides on-screen advice concerning how the story should be typed in.

- Don't use page, line, or verse numbers. These numbers are helpful in locating the original quotation, but they are in the way when playing the game.

- Break up long passages. A clue should contain, at most, two important facts or ideas. There will be more clues than lines or verses.

- Replace pronouns by their antecedents. Suppose the original passage says: "Then the king ...seized the priests and their wives and their children; and they showed him the secret door..." If this quotation were broken up after the word children, the second clue would begin "and they showed him the secret door..." Anyone who read this clue by itself would be confused. When written independently, the clue should read: "and the priests showed the king the secret door..."

- The program is written in **Applesoft BASIC**, which has trouble with commas, colons, and quotation marks when it stores passages in memory. Never begin a clue with a quotation mark. Change a sentence such as "HALT," SAID THE KING! to THE KING SAID, "HALT!" If the program rejects a comma or colon, replace it by an ellipsis. Should the program have trouble storing THE IDOL, BEL , for example, THE IDOL... BEL will store without difficulty.

- Do not use the ‹Return› key in the middle of a clue. The program will return you to the beginning of the next line automatically. Reserve the ‹Return› key to tell the computer that a clue is complete.

Clues are typed individually under these instructions:

```
TYPE IN THE QUOTATION VERSES.  IF YOU
HAVE ENTERED THE LAST 'CLUE,' TYPE THE
LETTER 'Q' TO QUIT.

CLUE #1
```

As you type in each sentence, you use the left arrow key to back up; however, lines are stored in memory as they are entered, so backing up to a previous line causes the whole line to be cleared for re-entry. The right arrow key cannot be used to re-enter letters.

Remember not to hit the <Return> key until you come to the end of the clue. When you do hit the key, the computer will reprint the entire clue and ask if you wish to retype it.

When you have typed in all the clues and accepted the last one, type

```
Q <Return>
```

(for Quit) to have the passage stored on the game disk.

Creating the WHO File. Once you have typed in the story, the computer will print

```
          THE PEOPLE INVOLVED
ACCORDING TO THE BOOK, THIS PASSAGE WAS
WRITTEN BY (IF UNKNOWN, TYPE 'U')
?
```

For *Bel and the Dragon*, no author is known. After U is entered, the screen reads

```
HOW MANY 'ACTORS' (IMPORTANT PEOPLE OR
GROUPS) ARE THERE IN THE STORY?
```

For this story there are three central actors (the priests, the king, and Daniel), although one could include Bel, and, possibly, peripheral characters such the priests' wives and children, and the Babylonians. A response of 3 leads to:

```
LIST THE 'ACTORS' BEGINNING WITH THE
LESS IMPORTANT ONES

1.
```

After entering in turn, THE PRIESTS, THE KING, and DANIEL, one reads on the screen

```
1: THE PRIESTS
2: THE KING
3: DANIEL

RIGHT (Y/N)?
```

Note the use of the article: THE KING, rather than KING, for example. This is not required, but will make the questions in **DETECTIVES** sound smoother later. When the list is accepted (with a Y), it is stored on the game disk under **WHO**.

Creating the WHERE File. Creation of the **WHERE** file mirrors the creation of the **WHO** file. You will be asked how many places there are in the story and then asked their names. For *Bel and the Dragon*, locations include BEL'S TEMPLE and OUTSIDE THE SEALED DOOR. Word the location to conclude the sentence, "What happened when the location was..." You will be given a final opportunity to accept or reject your data before they are stored in the **WHERE** file.

Creating a WHEN File. This time you will be asked how many times (or occasions) are mentioned and then asked to identify them. The questions in **DETECTIVES** will sound natural if you choose your phrases to end the sentence, "What happened when..." For *Bel and the Dragon*, occasions include

```
THE PRIESTS LEFT THE KING AND DANIEL IN THE TEMPLE
THE KING AND DANIEL SEALED THE DOOR AND DEPARTED
THE KING GAVE BEL OVER TO DANIEL.
```

There is the usual opportunity to accept the list before it is saved to the file WHEN.

Creating the HOW and HOWZIT Files. Next the computer asks:

```
                HOW THINGS HAPPENED

FOR HOW MANY EVENTS DO YOU WISH TO ASK
'HOW WAS THIS DONE?'
```

In creating the HOW file, specific causes should be listed ahead of more general events. The form of the question in DETECTIVES is: "I'll name an event. You tell me the method (reason) behind it." List events with this question in mind. Possible questions from *Bel and the Dragon* are

```
THE KING SEALED THE DOOR.
DANIEL SET A TRAP FOR THE PRIESTS
THE PRIESTS CAME AND ATE AND DRANK EVERYTHING
THE KING KNEW HE HAD BEEN DECEIVED.
```

As these events are entered, each is echoed to the screen for the user to accept or type over. When all events are accepted, each in turn is repeated on the screen so that the method used can be entered. For example,

```
                REASONS

FOR EACH OF THE FOLLOWING EVENTS, TYPE
IN HOW IT WAS DONE

THE KING SEALED THE DOOR

THE METHOD (REASON) 'HOW' WAS
```

Here the method entered might be...

```
THEY... SEALED IT WITH THE KING'S SIGNET
AND DEPARTED.
```

The second line is optional. Use direct quotes when possible. The children will ignore the ellipsis that indicates some words are missing, but I use it anyway. Anything after a comma or colon will be ignored, so you must use an ellipsis for punctuation as well. As always, there is an opportunity to correct errors.

Creating the WHY and WHYZIT Files. The creation of **WHY** files parallels the process for **HOW** files. This time you will list events for which the question will be: "Why was this done?" Some events that could be listed from *Bel and the Dragon* are

```
DANIEL HAD ASHES SIFTED OVER THE FLOOR
THE KING THOUGHT BEL MUST HAVE EATEN AND DRUNK...
DANIEL RESTRAINED THE KING AT THE TEMPLE DOOR.
```

As with the **HOW** file, you must enter answers to the **WHY** questions:

```
TO PRODUCE FOOTPRINTS ON THE TEMPLE FLOOR.
THE FOOD AND DRINK WERE GONE FROM THE TABLE.
DANIEL WANTED THE KING TO LOOK AT THE FOOTPRINTS.
```

When these data are entered, they will be stored on the camp disk, which is now ready to run **DETECTIVES.**

Programmers. The process of creating data files with **PREPARE.STORY** is somewhat tedious. Fortunately, it is not necessary to run the entire program to correct data in a single file. To prepare a single file, reset the computer, type the RUN command from the following table, enter the corrected data, wait for the data to be stored on the computer disk, check that the disk drive light is off, and reset or turn off the computer. Should you wish to correct more than one file, the table will allow you to choose your starting point. Here are the required RUN commands.

RUN COMMANDS FOR SINGLE FILES

For file	type...
SOURCE	RUN
WHO	RUN 30000
WHERE	RUN 31000
WHEN	RUN 31500
HOW / HOWZIT	RUN 32000
WHY / WHYZIT	RUN 33010

TYPE.IT

Sometimes a child will come to me and say: "I want to type on the printer." I try to interest them in a word processor, but if that fails I fall back on TYPE.IT. The function of the program is simple. Whatever letters the child types appear on the screen, and when the end of the line is reached or ‹Return› is struck, the line is printed, double-spaced, to the printer. If the child reaches the bottom of the screen, the screen is cleared.

To quit, the child is instructed to type Control-Q . By the time they are finished typing, most forget this and simply turn off the computer. That's fine, too.

READ.FILE

The READ.FILE program was written so that computer room operators could find out the contents of text (T) files. Suppose an older child named Kelly tries it out of curiosity. When READ.FILE is run, the screen says, simply:

```
NAME-
```

Should the camper enter, logically enough, KELLY, the computer determines that there is no file named KELLY, and screen will respond with

```
]
```

which is mystifying, but harmless. The instructor, who is clever enough to know that a file name is sought, can enter, say, REDUX, and be rewarded by

```
LOAD MAD.LIB
RUN 0

]
```

The bracket aside, these are the contents of the file **REDUX** Users are cautioned that there may be garbage at the end of a file. For example, if one child's name is saved in **NAMEF** as CHRISTOPHER ROBIN, but the next child to use the disk is named KIM, the output of **READ.FILE** will be

```
KIM
STOPHER ROBIN
```

and the bracket. Kim needn't worry. When the name is read from **NAMEF** the letters on the second line will be ignored.

Programmers. **READ.FILE** reads up to 25000 characters (625 full lines) from a file. If you suspect that the file is larger, list **READ.FILE** and increase the 100 in lines 70, 132, and 170 to a larger number.

Computer Camp
Check Sheet

Preparation

___ Obtained detailed maps of recruiting area

___ Locate computers (how many?)

___ Counselors
- ___ decide number

___ Prepare job descriptions
- ___ director
- ___ computer room counselor
- ___ crafts counselor
- ___ recreation counselor
- ___ junior counselor(s)
- ___ others (drivers, cooks, custodians...)

___ News release announcing camp
- ___ obtain names of newspapers, editors or owners
- ___ obtain names of radio and TV stations, program personnel
- ___ prepare and mail press release, newspapers
- ___ prepare and mail press release, other media

___ Remove camp material from storage

___ Perform inventory of equipment and supplies to determine needs

___ Pick up computers

___ Pick up overhead projection plate, if one is available

___ Order computer supplies
- ___ floppy disks, 5.25-inch
- ___ floppy disks, 3.5-inch
- ___ ribbons for printer(s)
- ___ paper for printer(s)
- ___ extra adhesive labels
- ___ markers
- ___

___ Order or borrow additional computer software (which?)

___ Order or borrow additional computer peripherals
- ___ monitors
- ___ floppy disk drives, 5.25-inch
- ___ floppy disk drives, 3.5-inch
- ___ mice
- ___ joysticks
- ___ keyboards
- ___ drive controller cards
- ___ printers
- ___ fans
- ___ surge protected multiple outlets
- ___ RAM-cards
- ___ 80-column cards

___ See school or sponsor to establish
- ___ dates
- ___ holiday celebrations
- ___ room schedules
- ___ keys

___ Identify concurrent school sessions
- ___ determine who is in charge
- ___ determine which students will attend
- ___ coordinate programs

___ Consult teachers about...
- ___ use of their rooms
- ___ use of their computers
- ___ use of their software (not recommended)

___ Schedule in-service training, if any, for teachers

___ Identify other conflicting activities (when, whom)
- ___ vacation Bible schools
- ___ summer camps
- ___ little league; other summer activities
- ___ work camps; other sponsor conflicts

___ Arrange transportation
- ___ identify vehicle(s)?
- ___ identify driver(s)
- ___ vehicle preparation; inspection
- ___ insurance (authorized driver list?)
- ___ arrangements for joint use; keys

___ Order or pick up craft supplies
- ___ books
- ___ plaster of Paris
- ___ plaster molds (consider candle molds; latex gloves)
- ___ powdered paint
- ___ ... (see list)

___ Order or pick up recreation supplies
- ___ ... (see list)

___ Create, update data base listing campers

- ___ get children's names, ages, addresses, ... from
  - ___ school or other sponsor
  - ___ previous year's records
  - ___ other sources (which: _____)

___ Make schedule showing arrivals, departures, vacation schedules for volunteers, other personnel

___ Locate a refrigerated storage area for snacks

___ Flyers for publicity and registration
- ___ Locate colored paper
- ___ Prepare forms
- ___ Run off flyers

___ Distribute camp flyers
- ___ to parents along first bus route
- ___ to teachers, others bringing children
- ___ to sponsors' receptionists

___ Posters
- ___ decide number, locations
- ___ prepare
- ___ post

___ Modify Camp Master with local names, references...

___ Prepare strip maps and bus schedules

___ Conduct interviews
- ___ director
- ___ computer room counselor
- ___ crafts counselor
- ___ recreation counselor
- ___ junior counselor(s)
- ___ others (drivers, cooks, custodians...)

___ Arrange for food
- ___ schedules
- ___ training
- ___ estimate headcounts
- ___ orders (include paper products, garbage bags, pop & candy)

___ Set up facility for the camp

- ___ custodial cooperation
- ___ clean, reorganize
- ___ move furniture
- ___ run wiring
- ___ window security (bars) and shades
- ___ move equipment
- ___ move supplies
- ___ move school equipment
- ___ wastebaskets, brooms, mops, garbage bags...
- ___ hasps, padlocks, keys

___ Take bus schedule to parents

___ Sort software

___ Prepare tentative group lists for counselors

___ Prepare camp disks

This happened at a community Bible School in 1988, rather than at computer camp. I hope it never happens at computer camp! I suppose it could.

A woman received a phone call from a stranger. "Your granddaughter just died at the Bible School. Sorry, that's all I know."

In deep distress, the grandmother called the church. Fortunately, the pastor was able to put the granddaughter on the phone immediately, but found it harder to answer the insistent inquery, "Who did die, then?"

What a sick joke! I guess it was a joke.

ALTERNATE SCHEDULES

The schedule that I use and recommend is given in the main body of this report; however, your sponsor may not share my view that children should share computers on a routine basis. The schedules that follow assure that each child will have a computer for his or her own use, but they will spend less time in the computer room. This appendix also includes a number of schedules that may be used when a sponsor is limited in computers, adult leaders, or transportation.

Schedules for Exclusive Use of Computers

The alternate schedule shown in Figure 1 allows each child to have his or her own computer, but computer time is reduced. Older children like this schedule, but 90-minute class periods are too long for younger children. With two-thirds of the children outside the computer room, the recreation and crafts instructors must supervise larger groups, thirteen children rather than ten, typically. Ninety-minute periods become necessary if the computer camp features a sponsor-supported activity that is not easily compressed into a shorter time period. Most of the abbreviations in the figures are those used earlier: snack (Snk), unstructured play (Play), computer room (Comp), arts and crafts (A & C), lunch (Meal), computer room with VCR (C/VCR).

Time		9:00	10:30	Noon	12:30	2:00	
GROUPS:							
Blue	Play	Snk	Comp	A & C	Meal	Rec	Play
Green	Play	Snk	Rec	Comp	Meal	A & C	Play
Red	Play	Snk	A & C	Rec	Meal	Comp	Play

Figure 1. Alternative schedule with 90-minute periods

The objection to longer periods can be avoiding by using six 45-minute sessions (Figure 2), but six activities can be burdensome to schedule daily and considerable time is lost between classes.

Time:	9:00	9:45	10:30	11:15	Noon	12:30	1:15	2:00
GROUPS:								
Blue	Play Snk	Comp	A & C	Rec	Comp	Meal	A & C	Rec	Play
Green	Play Snk	Rec	Comp	A & C	Rec	Meal	Comp	A & C	Play
Red	Play Snk	A & C	Rec	Comp	A & C	Meal	Rec	Comp	Play

Figure 2. Alternative schedule with 45-minute periods

A schedule that combines 45-minute periods for the two younger groups with 90-minute periods for the oldest children is possible (Figure 3), but difficult to remember and follow.

Time:	9:00	9:45	10:30	11:15	Noon	12:30	1:15	2:00
GROUP:								
Blue	Play Snk	Comp		A & C		Meal	Rec	Play
Green	Play Snk	Rec	A & C	Rec	Comp	Meal	A & C	Comp	Play
Red	Play Snk	A & C	Rec	Comp	Rec	Meal	Comp	A & C	Play

Figure 3. Schedule with both 45 and 90-minute periods

Forty-five and ninety minute periods leave only half an hour for lunch. A shift to periods of forty and eighty minutes would give the desired hour for lunch, but would not meet the federal guideline for a three hour lapse between a reimbursed snack and lunch.

Schedules for Camps with Limited Resources

In the first year of operation, especially, a sponsor is apt to have fewer computers and adult leaders than desired. I will begin by providing schedules for camps with two adult leaders, after which I will suggest schedules to be used by a single adult.

RUNNING A CAMP WITH TWO ADULTS

When only two adult supervisors are available, one runs the computer room and the second directs other activities. If there are plenty of computers, divide the camp into three groups, with two of these in the computer room at a given time, since it is easier to handle a large number of children in the computer room. Younger children, especially, will find this too much computer time, so set up a VCR in a corner of the computer room for those who grow restless. Reassign computers and software every 45 minutes as new groups leave or arrive in the computer room. The recommended schedule is shown in Figure 4. Note that the

oldest children (blue group) have two 90-minute periods with the computer, while the younger groups have one 90-minute period and two 45-minute periods.

Time:	9:00	9:45	10:30	11:15	Noon	12:30	1:15	2:00
GROUP:								
Blue	Play Snk	Rec	Comp	C/VCR	A & C	Meal	Comp	C/VCR Play
Green	Play Snk	Comp	Rec	Comp	C/VCR	Meal	A & C	Comp Play
Red	Play Snk	Comp	C/VCR	Rec	Comp	Meal	C/VCR	A & C Play

Figure 4. Recommended schedule for two adults. A VCR is available (CV) for the second half of each group's computer period.

If the number of computers is limited or the adult who directs recreation and crafts can handle half the children at a time, the simpler schedule in Figure 5 is possible.

Time:	9:00	10:00	11:00	Noon	1:00	2:00
GROUP:						
Blue	Play Snk	Comp	Rec	Comp	Meal Snk Play	A & C Play
Red	Play Snk	Rec	Comp	A & C	Meal Snk Play	Comp Play

Figure 5. Schedule for two adults handling equal-sized groups

If the number of computers is limited, but two adults are available for supervision, follow the "one-adult schedules" in the next section, but have one adult supervise children working alone or in pairs while the other adult supervises the remainder.

SCHEDULES FOR CAMPS WITH A SINGLE ADULT

While it is possible to run a computer camp with only one adult and one computer, limited resources reduce the number of campers that can be invited. The schedules that follow assure that, at worst, every child has some time daily at the computer with or without a single partner. In addition, there are group sessions with up to eight children using a single computer under adult supervision. Camps for a single supervisor are limited to twelve children, although an experienced teacher or counselor may be able to handle more.

The most limited case, one adult with one computer, is shown in Figure 6. The schedule will accommodate up to eight children. Following Figure 6, the schedule is given in detail.

Time:	9:00	9:40	11:00	Noon	12:40	.	2:00
GROUP:							
Main	Play Snk Demo	Rec	Game	Meal Snk	A & C		Play
Others		2^{Ed} 2^{Ed} 2^{Ed} 2^{Ed}			2^{Gm} 2^{Gm} 2^{Gm} 2^{Gm}		

Figure 6. Schedule for one adult, one computer, and eight children.

Schedule in Detail

8:00 - 8:50 Transportation of children to camp; unstructured play (Play) by early arrivals

8:50 - 9:00 Snack (Snk)

9:00 - 9:40 Tutorial session or demonstration (Demo) led by instructor with all eight children participating.

9:40 - 11:00 Educational software use by two children (2^{Ed}) while the instructor leads the other six in recreation (Rec). The instructor changes the children at the computer every twenty minutes.

11:00 - 12:00 Computer game (Game) for group of eight children coordinated by instructor.

12:00 - 12:20 Lunch (Meal)

12:20 - 12:40 Opportunity to buy one soda and one candy bar at reduced prices.

12:40 - 2:00 Instructor leads six children at arts and crafts (A & C) while two others use the computer to play games (2^{Gm}), changing pairs every twenty minutes.

2:00 - 3:00 Transportation home; recess for children who remain

If two children cannot work as partners, consider splitting them and allowing one child to use the computer alone in the morning and the other to use it alone in the evening, running educational disks and games on alternate days.

An adult with two computers can handle 10 children with the schedule shown in Figure 7, where the main group moves to a new activity on the hour. In this case children may have a computer to themselves for 20 minutes while using educational software, but must share a computer with another child for each 20 minutes of computer games. So there will be only one transition when recreation is outside the computer room, the computers are unused for a portion of the recreation period. Children who elect to use educational software rather than games while working in pairs should be rewarded.

Time	9:00		10:00		11:00		Noon	1:00		2:00		
GROUP												
Main	Play	Snk	Rec		Demo		A & C	Meal	Snk	Play	Game	Play
Others			$_1$Ed $_1$Ed		$_2$Gm $_2$Gm		$_1$Ed $_1$Ed $_1$Ed				$_2$Gm $_2$Gm $_2$Gm	
			$_1$Ed $_1$Ed				$_1$Ed $_1$Ed $_1$Ed					

Figure 8. Schedule for one adult, two computers, and ten children. During recreation (Rec) and crafts (A & C), each computer is used by a single child. When one computer is used for a demonstration (Demo) or group game (Game), two children use the other to play what they wish.

If three computers are available (Figure 8) it is no longer necessary to have some children using computers during the recreation period while the adult is outside with the others. Children who decline to be 30-minute partners for games can work individually for 15-minute periods. The main period is 60 minutes.

Time:	9:00		10:00		11:00		Noon	1:00		2:00		
GROUP:												
Main	Play	Snk	Rec		Demo		A & C	Meal	Snk	Play	Game	Play
Others					$_1$Ed $_1$Ed $_1$Ed		$_2$Gm $_2$Gm				$_1$Ed $_1$Ed	
					$_1$Ed $_1$Ed $_1$Ed		$_2$Gm $_2$Gm				$_1$Ed $_1$Ed	
							$_2$Gm					

Figure 8. Schedule for one adult, three computers, and ten children. Children use educational software ($_1^{Ed}$) for 20-minute periods and are paired to play games ($_2^{Gm}$) for 30-minute periods.

When four computers are available, children can get their individual computer time without interrupting either recreation or arts and crafts. The schedule in Figure 9 has the minor inconvenience that some children play educational games individually while others are paired to play games, but this stretches limited supplies of software while keeping the number of children using the computer in groups at eight. It's not a hassle if one computer is set aside as the game computer with the game disks kept there. This is even easier to manage if computers have hard disks with appropriate programs on each.

Time	9:00		10:00		11:00		Noon	1:00		2:00		
GROUP												
Main	Play	Snk	Rec		Demo		A & C	Meal	Snk	Play	Game	Play
Others					$_1$Ed $_1$Ed $_1$Ed						$_1$Ed $_1$Ed $_1$Ed	
					$_1$Ed $_1$Ed $_1$Ed						$_1$Ed $_1$Ed $_1$Ed	
					$_2$Gm $_2$Gm $_2$Gm						$_2$Gm $_2$Gm $_2$Gm	

Figure 9. Schedule for one adult, four computers, and twelve children.

If five computers are available, children need not share computers for game use. Having half the children use educational software while the rest play games (Figure 10) requires less software and results in less fighting over disks.

Time:	9:00	10:00	11:00	Noon	1:00	2:00
GROUP:						
Main	Play Snk Rec	Demo	A & C	Meal Snk Play	Game	Play
Others		$_1$Ed $_1$Ed $_1$Ed			$_1$Ed $_1$Ed $_1$Ed	
		$_1$Ed $_1$Ed $_1$Ed			$_1$Ed $_1$Ed $_1$Ed	
		$_1$Gm $_1$Gm $_1$Gm			$_1$Gm $_1$Gm $_1$Gm	
		$_1$Gm $_1$Gm $_1$Gm			$_1$Gm $_1$Gm $_1$Gm	

Figure 10. Preferred schedule for one adult, five computers, and twelve children.

If there is plenty of software, having every child do the same thing (Figure 11) reduces the instructor's record-keeping.

Time:	9:00	10:00	11:00	Noon	1:00	2:00
GROUP:						
Main	Play Snk Rec	Demo	A & C	Meal Snk Play	Game	Play
Others		$_1$Ed $_1$Ed $_1$Ed			$_1$Gm $_1$Gm $_1$Gm	
		$_1$Ed $_1$Ed $_1$Ed			$_1$Gm $_1$Gm $_1$Gm	
		$_1$Ed $_1$Ed $_1$Ed			$_1$Gm $_1$Gm $_1$Gm	
		$_1$Ed $_1$Ed $_1$Ed			$_1$Gm $_1$Gm $_1$Gm	

Figure 11. Alternate schedule for one adult, five computers, and twelve children.

With six or more computers, it is no longer necessary to conduct formal group sessions (Figure 12).

Time:	9:00	10:00	11:00	Noon	1:00	2:00
	Play Snk Rec	Educ	A & C	Meal Snk Play	Games	Play

Figure 12. Schedule for one adult, more than five computers, and twelve children. Children work in pairs for the whole 10:00 to 11:00 period using educational software (Educ) and for the whole period after 1:00 to play computer games (Games).

Scheduling with Limited Transportation

If it takes more than an hour to transport all the children, consider dividing the children by buses, rather than by age, and begin camp activities while children are still in transit.

Schedule When Transportation Is Limited

Time	Group I	Group II
8:00	Pick up children	
8:50	Snack at school	
9:00	Computer room	Pick up children
9:50		Snack at school
10:00	Recreation	Computer room
11:00	Computer room	Recreation
12:00	Lunch	Computer room
1:00	Arts and crafts	Lunch
2:00	Van departs	Arts and crafts
3:00		Van departs
4:00		Last child returns home

Group I's lunch and craft periods can be reversed. The wait until lunch is lengthened, but only one lunch needs to be served.

The principle can be extended to serve more children.

Schedule When Transportation Is Limited: 45-Minute Periods

Time	Group I	Group II	Group III
8:10	Pick up		
9:00	Recreation	Pick up	
9:35	Snack	Snack	
9:45	Computer	Recreation	Pick up
10:20			Snack
10:30	Crafts	Computer	Recreation
11:15	Recreation	Crafts	Computer
12:00	Computer	Recreation	Crafts
12:45	Crafts	Computer	Recreation
1:30	Lunch	Lunch	Lunch
2:15	Depart	Crafts	Computer
3:00	Home	Pick up	Crafts
3:45		Home	Depart
4:35			Home

Schedules When Transportation Is Limited: 60-Minute Periods

Time	Group I	Group II	Group III
8:00	Pick up		
8:50	Snack		
9:00	Recreation	Pick up	
9:50		Snack	
10:00	Computer	Recreation	Pick up
10:50			Snack
11:00	Crafts	Computer	Recreation
12:00	Lunch	Crafts	Computer
1:00	Depart	Lunch	Crafts
2:00	Home	Depart	Lunch
3:00		Home	Depart
4:00			Home

If some children live much further away than others, it may be necessary that the distant group arrive first and leave last to reduce the time that other children wait for the van. The easiest way to handle this situation is to set up a VCR for them while they wait. One such schedule follows.

Schedule when Campers Are Very Distant

Time	Distant Group	Closer Group
7:30	Pick up	
8:50	Snack	
9:00	Computer	Pick up
9:50		Snack
10:00	Recreation	Computer
11:00	Computer	Recreation/Crafts
12:00	Crafts	Computer
1:00	Lunch	Lunch
2:00	VCR	Van Departs
3:00	Van Departs	Home
4:20	Home	

Both groups have two hours in the computer room. For the closer group, recreation on one day at 11:00 is followed by crafts the next day.

Summary of Scheduling Principles

No two computer camps are exactly the same, and sponsors will want to consider other schedules. To summarize, the principles applied here were:

- Limit the number of children supervised by one person outside the computer room to twelve. Limit children within the computer room to twice the number of computers (prefesably 1-1/2 times)

- Limit the number of computers to thirteen in one room. The more similar the computers, the more that can be accommodated.

- Schedule a morning snack and lunch separated by at least three hours.

- Provide three types of activities: computer use, recreation, and crafts. Sponsor-supported activity may be substituted for recreation or crafts.

- Avoid outdoor recreation on hot, summer afternoons.

- When the number of computers is limited, schedule a group activity by the instructor using a single computer. The size of such groups should be limited to eight.

- Allow children to work as individuals or in pairs from 20 to 30 minutes concurrently with other activities.

- When possible, allow children to work individually with educational software, in pairs for games.

- Provide variety, especially for younger children

- Avoid staggered lunch hours.

He was much the bigger of the two, and his fist blow had raised a blue welt over the younger boy's eye. The little one was squawling, and I was angry and ready to suspend the older boy permanently. "Well," he said, defending himself, "He bit me!" He pulled up his shirt, and, surely enough, the younger boy had drawn blood.

I was mulling over what to do, when it dawned on me that it wasn't my call. The combatants were brothers. "Your mother can decide," I said. The boys were getting along when they went home, but I had a black eye to explain when we got there. They were both back the next day, preacher's kids, fun to have around.

A TWO-WEEK RECREATION SCHEDULE

Policy

The pages that follow give a recreation schedule for a two-week camp with seven to twelve year old children, some suggestions about scheduling, some recommended activities, and a description of Swiss system tournaments. At camps such as mine, each child spends an hour a day in "recreation." While the term is flexible and could be stretched to include watching television, the intent is to emphasize exercise and "large muscle activity." Some indoor options are provided for days that are too hot or too wet for play outside.

As a matter of control, I require children to remain with the group, but they are urged -- not forced -- to participate. There should be a graceful way for children who sit out initially to enter the game a few minutes later, but they ought not to receive a benefit (choose team, get to bat immediately...) when they do so. If you pay your junior counselors, require them to participate with enthusiasm.

Most kids enjoy competition. The evils are that less athletic children are excluded or chosen last and that losers feel badly. I avoid the first evil by assigning teams or choosing them randomly by counting off. Other ways to choose teams randomly: use shoe color, birthdays, or alphabetical order. Assigned teams take more trouble on your part, but they work better, because you can avoid splitting close friends. I try to keep people from being losers by not emphasizing who won and by ignoring the score. When I lead Kick Ball, for example, and someone asks who is winning, I usually answer, "I think it's a tie!"

If you have a clumsy child who is miserable on the playing field, make him or her your assistant with the job of monitoring a foul line or something similar.

Equipment

Outdoor: basketball goal, basketball, volleyball, kickball, beach ball, clothes line or net, balloons, sheet or light bedspread

Indoor: Nerf ball, dominoes, clothespins, cards (Uno is good)

Schedule

The recreation director should schedule two activities for every hour with older children and three activities hourly for the younger ones. Having three

games ready does not obligate the leader to play all three. If children are enjoying the first and wish to continue it for the entire hour, there is no good reason to stop. On the other hand, a new activity should be ready when children lose interest. Having two alternatives for one group and three for the other does not imply the necessity for fifty different activities during the ten weekdays of a two-week camp. Children who enjoy an activity on Monday will be glad to play it again on Wednesday, and there are many activities that are appropriate for both age groups, although the younger children will tire sooner.

Some camps, unlike mine, have a generous recreation budget or exceptional facilities, such as a swimming pool or air-conditioned gymnasium. Such camps should use what they have available and not be constrained by my inexpensive alternatives.

It is unlikely that you will want to follow my schedule in detail. Some of the activities may not appeal to your children, and you will want to try other things that are not on my list; however, whether you use my list or your own, you should take the trouble to have a schedule before you begin and you should make a note of what works and what does not. A schedule helps you to be prepared with the necessary equipment handy when it is needed, and a record of what works assists scheduling both the second week and in camps to come. There is no requirement that schedules be followed slavishly or that records be formal.

In making my schedule, I was guided by certain ideas. I begin with a short activity in which kids can stretch muscles and get into the recreation routine, followed by something more sustained. There is a third, backup, option for the younger children. A short, less intense activity at the end of the period is a good idea to allow the children to cool down a bit.

As a general rule, older kids are not asked to play a game that the younger ones are scheduled to play first. That's a prescription for the complaint: "That game's for little kids!" There is no problem if the game is begun in the older kid's group and tried in the younger group a day later.

I don't play any extended game on successive days, even if it seems popular the first time. I do ask children to suggest activities for the following day, but I never ask them to vote. Those who lose a vote tend to be negative about or opt out of whatever they voted against.

Day	Older Kids	Younger Kids
Monday	Indian Hand Wrestling Dodge Ball	Crows and Cranes Surprise Ball
Tuesday	Kickball or Work Up Indian Hand Wrestling	Follow the Toss Dodge Ball
Wednesday	Indian Wrestling II Scavenger Hunt	Ball Tag Kick Ball or Work Up
Thursday	Four Square Volley Ball Indian Wrestling II	Squirrels and Trees Scavenger Hunt
Friday	Kick Ball or Work Up Simon Says	Crows and Cranes Surprise Ball
Alternate	Limbo	Four Square
Monday	Indian Hand Wrestling Deck Tennis Four Square	Squirrels and Trees Kick Ball or Work Up
Tuesday	Dodge Ball Surprise Ball	Ball Tag Deck Tennis
Wednesday	Kick Ball or Work Up	Dodge Ball Surprise Ball
Thursday	Four Square Alphabet Search	Crows and Cranes Kick Ball or Work Up
Friday	Treasure Hunt Volley Ball Four Square	Treasure Hunt Deck Tennis
Alternate	Odd and Even Four Square	Limbo

Games

The games that follow are categorized as either OUTDOOR or ANYWHERE, but use common sense. Some games, like tossing water balloons, must be played outdoors. Some, like tag, can be played either outside or in a large enclosed area, like a playroom or gymnasium. Some can be managed in a classroom, and a few can be enjoyed quietly in a corner while others are working.

OUTDOOR

Ball Tag

Give one child a beach ball or any other large ball that cannot be thrown a great distance. Choose another child to be it. The child who is it chases the child with the ball. The child with the ball becomes it if tagged, or if the person who is it gets the ball before the ball is touched by another person. It is unkind, but part of the game, for the person with the ball to make another person it by bouncing the ball off him or her to a spot where the person who is it can retrieve it.

Basketball

My camps are run in Kentucky, where basketball is the king of the sports, and children learn to dribble a ball while they are still toddlers. The intensely competitive nature of the sport, together with the heat of summer days, makes team basketball a poor choice for summer camps. There are other basketball games, and your children will know some of them. Most involve one child shooting while the rest stand around. To fill in vacancies in my schedule, I have a basketball goal with several balls. If there is only one ball, only the three best athletes will get to use it. If the camp has an air-conditioned gym and the recreation director has coaching skills, reconsider basketball as a sustained activity.

Crows and Cranes [1]

Divide the children into two teams and have them face each other in lines a yard apart. Designate one team as crows and the other as cranes. Each team has a base about twenty feet behind it. The leader stands at one end of the lines and calls: "Crrrrr...ows!" On hearing their name, the crows turn and run, while the cranes try to catch them before they reach their base. Any crow that is caught joins the cranes' team. The two teams line up again, and the game is repeated

with the leader sometimes calling "Crrrrr...ows!" and sometimes "Crrrrr...anes!" The game continues until the children tire of it or all of the children are on a single team.

Deck Tennis

Young children do not have the coordination to play volleyball well, often hitting the ball too far or out of bounds. Try deck tennis. In place of a ball, take a 16-inch rope, butt the two ends together to form a circle, and tape them together. The circlet is thrown over the net, and a member of the receiving team tries to catch it by poking either hand through the loop. After a catch, the child has three seconds to throw the rope back across the net. The three-second rule is designed to keep the game moving and need not be strictly enforced as long as there is no problem. The same game can be played with a ball, of course.

Dodgeball

There are many forms of dodgeball, and the children on your playground will probably have a version that is familiar to them. One variation is to form two lines of children about twenty feet apart with one child between them. A child in the middle who is hit below the waist changes places with the thrower. A circle may be used in place of two lines. When there are many children, try two teams, with one team forming the two lines and the other team in the middle. When there are fewer children, have one line facing a wall and a single child in the middle.

Dutch Tag [1]

Dutch tag is a good game in an enclosed space such as a baseball diamond or a gymnasium. One child is it and runs until a second child is caught. The two children hold hands and try to catch another. The child at either end can make a tag. As more and more children are caught, the line becomes longer and slower, but it can now spread out to trap other children; however, no one in the line is allowed to let go to clutch or tag a surrounded child.

Follow the Toss [1]

One child stands by itself, while the others stand in an arc several feet away. The leader throws a ball or Frisbee to each child in turn, from one end of the arc to the other. Each throw is different, and the person who catches the object must throw it back in the same manner as it was received. When every

child has had a chance to catch and return, the leader moves to the far end of the arc, and the child at the near end becomes the new leader. Play until everyone has had a chance to lead.

Four Square

The four square layout, chalked or painted on the ground, consists of one large square divided into four equal, smaller squares labelled "1" through "4." There is a child in each square with other children lined up behind square 4. The child in square 1 bounces the ball once in his or her square and uses an underhand tap to hit the ball to one of the other squares. The child in that square waits for it to bounce and then hits it -- underhand or overhand -- back to square 1 or into one of the other squares. A child who misses a ball in his or her own square or cannot hit it into another square loses, and the game pauses. The child who lost goes to the end of the line, other children in the square move up to any vacant square, and the child at the head of the line goes to square number 4. The child in square 1 serves again, and the game continues. Turnover is rapid, and children will not get too impatient with as many as four children in line; however, you will need a referee.

Kickball

As a game to be played over and over with a minimum amount of equipment, it is hard to beat kickball. When there are many children, lay out the field as if for softball and use two teams. The batter stands behind the plate, and the pitcher rolls the ball to be kicked by the batter. As in baseball, the batter is out if the ball is caught in the air or thrown to the first base before the batter gets there; however, a fielder can also retire a batter by touching him or her with the ball or by throwing the ball and hitting any runner who is off base. A proper kickball is firm enough to be kicked a fair distance, but soft enough not to hurt a runner. If children are too aggressive, require that a thrown ball strike the runner below the waist for an out. In choosing teams, it is more important that teams be evenly matched in their poorer players than in their better players; i.e., the number of "easy outs" should be the same.

Relay Races

A confession: I dislike relay races. Most involve children shoving each other in line while waiting impatiently to do something difficult or embarassing. Competitions have more losers than winners, and the winning team usually

cheats. Actually, most teams cheat, but the winners do so more flagrantly. The races are over almost as soon as they begin, and the preparation is frequently not worth the trouble involved. Of course, if you disagree, add relays to your schedule.

Simon Says

Younger children enjoy Simon Says. One person is the leader while the others stand in a line. The leader begins, for example, with "Simon says, 'Raise your hand.'" Anyone who does not raise a hand is eliminated. Then the leader says, "Put your hand down." Since the leader omitted "Simon says...", those who drop their hands are eliminated. The last person to be eliminated becomes the new leader. An alternate version for very young children is "Do this...do that!" Here the leader makes a motion and says, simply, "Do this!" or "Do that!" Children copy "Do this" motions, but ignore "Do that."

Squirrels and Trees

Divide the children into pairs. If the number does not come out right, include one group of three children. Have the pairs stand with one child in front and the second (and third) behind, holding the one in front at the shoulders. Say, "All of you are trees, except Pat and Lee," choosing two children to start the game. Place Pat on one side and Lee on the other, designating one as a squirrel and one as a dog. At the word "Go," the dog chases the squirrel. At any time, the squirrel can run to a tree, coming up behind the back child and grasping his or her shoulders. When this happens, the front child in the tree is given a slight push and becomes a new squirrel to be chased by the dog. If it appears that the dog has gotten too tired to catch a squirrel, the leader calls: "Reverse," and the dog and squirrel change places, allowing the tired child to get to a tree and rest.

Surprise Ball

Hang sheets or blankets over a rope or net so that children on one side have trouble seeing children on the other side. Use closer boundaries than in volleyball or deck tennis. A child on one side throws a ball over the net, and someone on the opposing team must catch the ball before it lands. The fun is in not knowing when or which way the ball will be coming; however, the ball must be thrown within ten seconds of having been caught. A large, light beach ball works best.

Treasure Hunt

Do not confuse a treasure hunt with a scavenger hunt. A scavenger hunt is an unstructured search for many items on a list. A treasure hunt is a highly structured search for a series of items in order. From the child's standpoint, this is what happens. While the children are together in a group, the leader reads a riddle. For example, "I keep time, but I never move." After a moment someone realises that the clue points to a sundial and heads in that direction with a string of other children running behind. At the sundial is another clue: "Rabbits are fast, and turtles are slow. If I wanted mail, where would I go?" This leads the children to a mailbox, and so on until they have solved all the riddles. Treasure hunts are fun, but they take a lot of preparation and are over almost as soon as they start. It matters little if someone can't solve the riddles, since he or she can simply run with the others. If you are willing to go to the trouble, dip some rocks in gold paint, and have a treasure hoard at the end.

Volleyball

The game of volleyball is well known, and the rules will not be repeated here. Although it is best played with a net, a clothesline is an acceptable substitute, especially if some rag ribbons are hung from it to make it easier to tell if a ball goes above or under the rope.

Work Up

When the number of children is too small for kickball, work up rather than using teams. Limit the number of batters to two or three and call any runner out who does not reach home before his or her turn to bat. If a player is out because the ball was caught in the air, the batter and the fielder making the catch trade places. For all other outs, the batter becomes an outfielder and all other fielders rotate to new positions: outfield --> third base --> shortstop --> second base --> first base --> pitcher --> batter. A catcher is not usually necessary. An amusing variation is to change the order in which the bases are run. After a few outs, at a moment when no one is on base, announce that bases are to be run in reverse order, or in a mixed up order such as first, third, second, home.

ANYWHERE

Alphabet Search

Alphabet searches are fun, can be conducted indoors or out, and take little preparation. Divide the children into teams, and give a sheet of paper and a pencil or marker to each team. Tell them to write the letter A on the first line, B on the second line, and so on to the end of the alphabet. They can turn the page over if they need to. Specify where they can and cannot search. At the word "Go!" they are to find one item beginning with each letter of the alphabet. They don't need to do these in order. You can require older children to use nouns (a rock is all right for the letter R, but a red sock is an S). Let younger children get away with murder. When no one else objected to K being satisfied by a "kool watch," who was I to interfere? Call time before they get frustrated by letters like Q and X.

Indian Hand Wrestling

Two children of approximately equal size face each other and clasp right hands. Each advances the left foot and stands so the inside of the ankles touch. The right foot is located a comfortable distance to the rear. At the word go, the children pull and push until one child loses by moving either foot. It is not legal to use the left hand in any way or to push the other person's body with the clasped right hands or forearms.

Indian Hand Wrestling (Variation)

Draw two parallel lines on the ground about two feet apart. Two children of approximately equal size stand squarely facing each other, each with both toes on his or her own line. The children raise their hands and touch palms at chest level, then draw their hands back until they are six to eight inches apart. At the word "Go," each tries to topple the other person, either by pushing palm to palm so they fall backward, or withdrawing the palms suddenly, so the other falls forward. This is a game of balance, not strength.

The Limbo

The Limbo is a Caribbean game in which, for once, the smaller children hold the advantage. The leader holds a stick or rope in a horizontal position about four feet above the ground. The children pass under the barrier in turn. There are two rules: a child may not touch the ground with a hand or knee, and

the knees must go under the barrier before the head. After everyone has tried at four feet, lower the barrier by three inches and let everyone try again. If there are many children, each must sit out after failing, but if there are fewer kids, they may be given as many as three tries. The game can be played either outdoors or indoors.

Odd and Even

This indoor game works best with six or eight children. I will describe how the game is played with six. With a larger group, either use two setups or allow one group to watch the other before they try. Divide the group into two teams. Since the game is cooperative, rather than competitive, I usually match three girls with three boys; otherwise, kids have trouble remembering who their teammates are. There are other alternatives: *e.g.*, kids with caps versus kids without caps. You will need a row of chairs, one more chair than you have children. Seat the girls on the left and the boys on the right with a vacant chair in the middle. Give these instructions. "There are two legal ways to move. You can move to a vacant seat if it is next to you, or you can jump over one person, boy or girl, to a vacant seat next to them. Only one person can move at a time. There is one catch. Girl move to the right, but not to the left. Boys move to the left, but not to the right. Following these rules, see if you can rearrange yourselves so the boys are on the left and the girls on the right." When one group fails, let another group try, or rearrange the original groups so their order is changed. Yes, it can be done.

Scavenger Hunt

Although it takes some preparation, a scavenger hunt is always popular. Children may play as indiviuals, in pairs, or in teams. Decide the bounds of the game carefully, and make sure that the children know what they are. Make a list of items for the children to find. Include many that will be easy for everyone (*e.g.*, a white shoe), some that are a little harder to find (*e.g.*, an insect), a couple of the one-of-a-kind variety (e.g., an old license plate), some tricky items (e.g., something with nails, but no iron [a hand or foot]), and one or two that are quite difficult (*e.g.*, a four-leaf clover). Provide each child or team with something to hold their items or set them on. Call time before children get discouraged or bored. If you like, use the list that follows.

Scavenger Hunt

Find the following items and bring them to me. The first team to find an object gets 5 points. The next team gets 3 points. Start with the easier ones, even if they are not first on the list.

A	B		A	B	
_____	_____	A yellow dandelion	_____	_____	A dry rock
_____	_____	A nail that isn't made of metal	_____	_____	Something square
_____	_____	A four-leaf clover	_____	_____	A white shoe
_____	_____	A coin made before 1985	_____	_____	A bug
_____	_____	A bunch of **exactly** 5 pine needles	_____	_____	The number 8
_____	_____	One white flower	_____	_____	A ball
_____	_____	Something you can see through	_____	_____	A scout cap
_____	_____	A fastener (bolt, screw, nail, rivet...)	_____	_____	A pine cone
_____	_____	Something more than 50 years old	_____	_____	An egg shell
_____	_____	Something blue, not the sky, made by God, not people	_____	_____	Something with a hole in it that you wear

Rosters

Team A:

Team B:

Walking the Plank

You will need a log or a plank. A two by four is fine. Lay the plank on the ground. If you can't find a plank, use a painted line. Divide the children into two teams. Place one team on one end of the plank and the other team at the other end. Without touching the ground, the teams are to change places. If the plank is short, allow children to wait off the ends of the plank for their turns to go down it.

Swiss System

With activities like Indian Wrestling, where children compete in pairs, consider using the Swiss system. Unlike a straight elimination, where winners are emphasized and losers are stigmatized, the Swiss system lets every child play in every round, with increasingly even competition. You will have to do some record keeping.

With eight children it works as follows. Although the process that follows involves terms like rankings, top halves, and bottom halves, you should not use these terms in talking to the children. Just say: "Pat, you play Kelly."

Rank the children roughly by ability from A (best) through H (poorest). Then divide the field into two groups, the top half and the bottom half. For the first round, match the best of the top half versus the best of the bottom half, the second best of the top versus the second best of the bottom, as so on. Thus, in the first round, you will have A versus E, B versus F, C versus G, and D versus H. The difference in ability will be roughly the same in each competition, with A, B, C, and D as probable winners.

At the end of the first round, you will have four children who won and four who lost. To deemphasize winning, start with the four who lost. Again, rank the four and divide them into top half and bottom half. Let's say the losers were E, F, G, and H. The top half is E and F, the bottom half G and H. For round two, E plays G and F plays H. The same is done with the winners: A plays C and B plays D.

At the end of the second round you will have two children, let's say G and H, who have lost twice. They play each other. You will have two who have won twice, A and B, maybe. They play each other, also. There will be four children who have won once and lost once. Rank them, divide them into two halves, and pair them as before, making sure that no one is paired with a person they have already played. In our example, C would play E, and D would play F.

That would conclude the tournament. All but one child will have won at least once, and the loser's last match should be a close one. There will also be a clear winner, the only person to win three times, but there is no reason for you to make a big deal out of it.

With an odd number of children, use an imaginary child, who always loses, in the pairings, but assign the odd man out to compete against the junior counselor or yourself, where you play the fool, and treat the result in the pairings as a win for the child.

Reference

1. June Johnson, "The Outdoor-Indoor Fun Book," Harper & Brothers, New York, 1961

GROUP	MON	TUES	WED	THUR	FRI
I					
II					
III					
IV					

Week beginning _____

Recreation

ARTS AND CRAFTS ACTIVITIES

Introduction

If children attend a computer camp for longer than 90 minutes a day, they will need some activity outside the computer room, and one of the simplest and most sensible alternatives is crafts.

I define crafts very loosely to include any activities that are creative and carried out indoors at minimum cost. A purist might exclaim: "Crafts! Why, with that definition I could have them writing Haiku." My reply: "Indeed, why don't you?"

I don't insist upon the word "indoor." Creative activities involving nature require children to go outside, and going outside is always a good idea when one sprays or scatters.

There are many excellent books filled with creative projects, and I have listed a couple at the end. In between are lesson plans for two weeks of crafts for younger and older children with a few extra suggestions.

I'll mention one other possibility. One morning, as a surprise, cook with the kids. I recommend taffy. It gives each kid something to do, and the candy can wait until after lunch to be eaten. If you have an oven, bake cookies and get the kids to add decorative frosting... or frost a birthday cake. With that suggestion, I'll quit. This isn't a cook book.

Equipment and Supplies

Don't wait too long to stock your supplies. I make my purchases in three places: mail order houses, Bible book stores, and mass merchandisers. Some mail order sources will send you supplies by return mail. On the other hand, if you want a 100-pound sack of plaster of Paris, you may encounter a six-week lead time. Bible book stores are good sources, because vacation Bible schools use crafts in much the same way that computer camps do. Religious material is inappropriate in public school settings, but agnostic, Jewish, or Hindu children can use Christian paste and paint without offense. Don't delay your purchases from these stores, because vacation Bible schools deplete their supplies of basic materials very rapidly.

Many crafts supplies are available locally from drug stores and large chains such as K-Mart and Wal-Mart. Don't be surprised to encounter inventory problems there as well. It is surprising how much glue a computer camp can consume, for example.

The equipment that follows will handle 32 children. Most of the supplies should outlast the summer.

Equipment

4 ea	Cookie pans
2 ea	Low-temperature glue guns
1 ea	Electric stove or hot plate
1 ea	Paring knife
1 ea	Mop
8 ea	Yarn needles
2 dozen	Watercolor paint brushes, student quality
1 ea	Hand held paper punch
1 ea	One-gallon cooking pot
1 ea	Slide or overhead projector
4 ea	6 or 12-inch rulers
8 pair	Small, blunt-nosed scissors
2 pair	Small, blunt-nosed scissors, left-handed
4 ea	Scrub brushes
2 pair	Heavy duty sewing shears, 4 to 6-inch blades
1 ea	Stapler
4 ea	Hard toothbrushes
2 ea	Washtubs or baby baths

Supplies

1 roll	Aluminum foil
8 ea	Transparent plastic bottles
1 package	Artist's charcoal
1 ea	Clothesline
4 dozen	Clothespins
8 ea	Coloring books, varied
4 packs	Construction paper, assorted, 50 sheets
2 boxes	Craft sticks, 1000
4 boxes	Crayons
1 package	Paper cups
32 oz	Dishwasing detergent (Joy, Dawn...)
3 dozen	Wooden dowels, 1/4-inch dia. by 36 inch long
40 squares	Felt, in assorted colors
1 package	Food coloring
1 dozen	Freezer containers w/lids
1 dozen	Garbage bags
8 oz	Glycerine
1 package	Latex gloves, small
1 dozen	Glue, 8-ounce
2 packages	Glue sticks

2 dozen	Magazines or catalogs
4 packages	Markers, washable colors
8 ea	Newspapers, 2 papers for each of four days
1 dozen	Tenpenny nails
4 packages	Assorted macaroni noodles
1 lb	Rigatoni noodles
Large containers	Paint powder (red, yellow, blue, black)
Small containers	Paint powder (orange, green, white, brown)
1 can	Spray paint, clear
2 dozen	Black paper (or tissue), 12 by 18 inches
3 dozen	Paper clips, standard
16 ea	Paper clips, jumbo, colored
1 dozen	No.2 pencils
1 dozen	Plastic picnic knives or metal nail files
16 each	8-inch aluminum pie plates
8 ea	Large potatoes
2 packages	Punch pins
1 package	Jumbo pipe cleaners
3 dozen sheets	Posterboard
100 feet	Wide, plain, white shelf paper
8 ea	Discarded shirts for paint smocks
12 lbs	Baking soda
18 ea	Sponges
1 box	Staples
5 lbs	Corn starch
1 package	Soda straws, straight
2 rolls	Tape, masking
2 rolls	Tape, transparent
2 dozen sheets	Tissue paper, white or pastel
1 ball	Waxed string or package cord
3 rolls	Paper towels
144 ea	Flat washers, 1/4-inch holes
5 boxes (20 cakes)	Paraffin wax
1 roll	Waxed paper
6 dozen	Wiggle eyes
120-yard skeins	Yarn (red, orange, yellow, green, blue, white, black)

Activities

The children at my camps range in age from seven to twelve. As a minimum, there should be two craft activities daily, one for older children and one for younger. Even when the same activity is possible for both, some modification is usually necessary.

It is not a good idea to present to older children the same craft project that they see the youngest children displaying or carrying out of the room. "That's for babies," the oldest ones will say, and other kids in their group will follow their lead. The easy solution is start the project with older kids. The younger ones will

be glad to emulate them. If your daily schedule has younger kids in the crafts room before the older ones, let the older ones start the project today and wait until tomorrow for the younger ones.

The youngest children, seven and eight-years-old, have a short attention span, and you may need two projects for them each period. It's not necessary to be twice as inventive. Have one new event every day and let them return, if they wish, to a previous day's activities if they get bored. Whatever else you are doing, keep clay, coloring books and crayons handy as a backup. Do not let children use markers for coloring. Markers are for drawing lines, not for filling in areas.

There are many projects that children can continue only after they have your help getting started. If the startup period requires 4 minutes, and there are ten children in the group, it will take you half an hour to get everyone started, and those at the end of the line will get restless. To minimize the problem, make sure your teenaged assistant knows what to do beforehand. If you and the assistant will then take on the two brightest kids and ask them, in turn to instruct one other child, then the startup time is reduced to twelve minutes: four minutes to teach the first two, four more minutes for you and the children to teach four more, and four minutes for you and the teenager to get to the last two.

Suggested Schedule

Day	Older Kids	Younger Kids
Monday	Life Lines	Cornstarch Clay Macaroni Necklaces
Tuesday:	Illustrator	Pet Rock I Coloring
Wednesday:	Banners	Pet Rock II Macaroni Necklaces
Thursday:	Silhouettes Banners	Comic Strip Coloring
Friday:	Cartesian Diver Silhouettes	Wax Forms Craft Sticks
Alternate:	Orbs	Bubbles
Monday:	Family Tree: One	Orbs Coloring

Tuesday:	Family Tree: Two	Hand'n'foot Mural Macaroni Necklace
Wednesday:	Yarn Art	Alphabet Posters Cornstarch Clay
Thursday:	Potato Prints	Faces w/Moving Eyes Craft Sticks
Friday:	Ring Wing Airplanes	Bubbles Coloring
Alternate:	Craft Sticks	Ring Wing Airplanes

Craft Projects

PROJECTS FOR YOUNGER CHILDREN

Alphabet Poster

Requirements: posterboard or construction paper; white glue; markers; scissors; mail order catalogs or magazines

Among the suggested recreation activities is **Alphabet Search,** in which children write on a sheet of paper an object beginning with the letter A, one beginning with B, and so on. Use these as the basis for **Alphabet Posters**. Choose a letter like B for which there were several answers, and have children look for a few B objects (bugs, buds, bows, buttons...) in their room or playground. Write a large B in one corner of the page with a marker. With scissors, cut small pictures of B objects (balls, barns, beds...) from a catalog or magazine. Glue the pictures here and there in a pleasing pattern on the poster, then add the real objects, which can go on top of the pictures if necessary. Display the posters in alphabetical order in the crafts room. There is no need to display the whole alphabet, nor is there a compelling reason why two children cannot work on the same poster or on two different posters with the same letter.

Comic Strip

Requirements: two copies of several comic strips, black and white or colored; markers, construction paper; school glue; scissors; glue gun with glue stick.

Provide two copies of the comic section of a newspaper, and have each child choose one strip. Have them cut the strip out carefully, so as not to cut the strip above or below the one chosen. Do so with both copies. Black and white comics should be colored with markers. Center the better colored of the two strips on construction paper and glue in place. Pick a favorite character, one that appears in every frame, if possible. Using the second copy of the strip, cut out that character every time it appears. It is not necessary to cut out narrow spaces between legs or between arms and the body. Using the glue gun, attach the cutout character directly above the same character on the comic strip so that the attached piece is about an eighth of an inch above the strip. If you do not have a glue gun, fold a two-inch long, quarter-inch wide strip of paper back and forth to make a separator to glue between the strip and the cutout figure. Continue for each frame to obtain a three-dimensional copy of the strip. Label the strip above and below, e.g. "To Mommy ... from Lee." Do not hang in the vertical position before the glue is dry.

Cornstarch Clay

Requirements: cornstarch, baking soda, cookpot, cookie pan or tray, cloth, food coloring (optional)

Cornstarch clay is inexpensive and can be colored. It is not sticky and is relatively easy to clean up; however, you may wish to use it outside. Prepare it on the day of use, or refrigerate it in an airtight container. If refrigerated, it will need to be warmed to room temperature before use.

Look for recipes for play dough and for clay that will be baked on corn starch boxes. Here is one of the latter. Mix 4 parts baking soda with 2 parts cornstarch and stir into 3 parts water. Heat and boil until the mixture has the consistency of mashed potatoes. Pour out on a tray or cookie pan and cover with a damp cloth until cool enough to handle. Knead until it is pliable and work in a few drops of food coloring, if desired.

Faces with Moving Eyes

Requirements: construction paper; shelf paper; rulers; markers; scissors; yarn and large needles; tape; punch pins.

Here is an easy project that can be completed in about 30 minutes. Distribute construction paper and markers. Have each child draw a vertical oval . . .

on the paper, leaving a one-inch margin at the sides. Fold the paper so the top and bottom of the oval touch, and then unfold. Draw two horizontal ovals centered left and right on the crease. Refold the paper, and cut out these ovals.

Open the paper and use markers to complete a face within the large oval using the cutout ovals as eyes. Poke needle holes along the top of the oval and thread pieces of yarn through the holes to hang down on the face as hair. Secure the yarn on the back with knots or tape.

Cut vertical slits at the left and right hand sides of the face even with the eyes and extending from an eighth inch above the eyes to an eighth inch below. Using shelf paper, cut a two-foot long strip that is slightly narrower than the slits. The instructor may want to do this with a paper cutter. The two-foot length can be folded in half before cutting. Slide one end of this strip through both slits so that part appears behind the eye holes and the remainder sticks out to the left.

Taking care to mark only on the strip and not on the original face, draw sleeping eyes. Pull the strip to the right and draw new eyes, half open. Pull and draw them wide open. Pull and draw one eye winking. Next, draw them crossed. Continue until there are pairs of eyes along the whole length of the shelf paper strip. Let the children amuse themselves pulling the strips back and forth to change the eyes on their faces. The open eyes will move left and right together as the strip is pulled back and forth. Have the children write names underneath their faces, pull the strip back to its original position, and post using punch pins. Leave the faces up for a few days for them to play with before they are taken home to be attached to refrigerator doors.

Giant Bubbles

Requirements: a clean pail, pipe cleaners; one cup Joy or Dawn and 3 to 4 tablespoons of glycerine in 10 to 15 cups of clean cold water

Make eyelets with handles by twisting the ends of pipe cleaners into a loop. The tip of the pipe cleaner should point outward. Dip the pipe cleaner into the soup solution, lift it out, and allow it to drain for a second. Blow into the loop or wave the pipecleaner in the air. Very large bubbles are possible in clear air if care is also taken to use clean water and clean containers.

Hand'n'foot Mural

Requirements: six plastic containers with tempora paint, twenty to forty feet of wide shelf paper, a dozen sponges, and a water hose. Eight adult T-shirts from the rag pile are helpful.

Locate a sidewalk or pavement that can be reached by a garden hose. Unroll the shelf paper and put a rock at each corner to keep it from blowing. Put T-shirts on the children to protect their clothes. Mix the paint by shaking the paint containers and remove their lids. Dip a couple sponges in each container and lay the sponges on the grass. Have the children go to each sponge in turn to get paint on their hands, which should be wet, but not dripping. They should then make two handprints somewhere on the shelf paper. After a trip to the hose to rinse off one color, they can wet their hands in another color and mark the paper with another set of prints. Continue until all the children have made six sets of marks and rinse their hands. Taking care that the paint runs as little as possible, move the shelf paper to a place where it can dry on the grass, and hose off the sidewalk while the paint is still wet. Display the finished mural around the walls of one of the rooms.

You can add footprints to the handprints or have a second mural with footprints only. The obvious way is to have children remove their shoes, roll up long pants (have some rubber bands), walk through the paint, and then walk across the paper. An amusing, less messy alternative for slightly older kids is to keep them in their shoes (shucks) and have them make a fist. Next, the closed hand is set thumb side up on the wet sponge so that only the edge of the palm opposite the thumb and the inner joint of the little finger is wet by the paint. When the palm and little finger are pressed against the paper, a perfect image of a baby's sole is produced. The final step is to wet a fingertip with the sponge and touch the paper lightly with that finger to add baby toe prints. A little practice is recommended.

Macaroni Necklaces

Requirements: macaroni, preferably colored, and yarn, tempora (optional)

Like coloring books, setups for macaroni necklaces can be available any time a younger child gets bored or frustrated by another activity. Wooden beads cost about twenty cents apiece in craft stores, while a package of over 100 large

noodles costs less than a dollar. Of the various varieties of pasta, I recommend rigatoni, but choose for yourself from the macaroni display case. If you have time, dip the noodles in tempera and hang them on a string above a newspaper to dry. Paint makes the noodles more attractive and bug resistant.

Have the child use scissors to cut a piece of yarn long enough for a necklace. Thread the macaroni on the yarn, beginning at the middle, adding the same kind and color of macaroni first to one end of the yarn, and then to the other. When the necklace is complete, tie the ends together.

Orbs

Requirements: four or five skeins of brightly colored yarn; two sticks, up to twelve inches long, for each child. Craft sticks or wooden dowels will do, but dead switches about 3/8 inch in diameter look less artificial.

"Orbs" are often called "God's Eyes," and you may be familiar with them under that name. Tie one end of a strand of yarn to the middle of a stick that is up to twelve inches long. Lay another stick across the first at right angles to it and centered. Wind the yarn once, clockwise, around the second stick and pull the loop snug, but not so tight that the yarn stretches. Rotate the orb 90 degrees, and wind the yarn once, clockwise again, around the first stick. Keep it snug. Rotate the orb 90 degrees in the same direction as before, and wrap the yarn around the first stick again. If you have followed directions, the second wrap will be on the opposite side of where the sticks intersect from the first wrap. Continue turning the orb 90 degrees, stretching the yarn from one arm of the orb to the next, each time making a single wrap around the stick. After you have turned the orb completely around five to ten times and have five to ten parallel squares of yarn at the center, cut the yarn and tie a second strand of a different colored yarn to the first. Trim the loose ends of the knot and continue to work your way outward. Change yarn colors as often as it pleases you. When you have worked your way to the end of a stick, tie the end of the yarn there.

Occasionally an older child will attempt a larger orb with longer sticks. In this case, it is recommended that three sticks be used, rather than two, resulting in hexagons, rather than squares. Three sticks may be used for smaller orbs, but younger children have trouble holding them together at the beginning, and smaller six-sided orbs look thick at the center.

Bright orbs of different colors make a pleasing decoration to a computer or crafts room, and they brighten up a living room when taken home.

Explain to the children that they will be making banners to hang in their bedrooms or give to their parents. It's helpful to have some sports logos or other examples for them to look at.

Have them begin by sketching their design on construction paper. A finished product is not required, but there will be fewer frustrations later if they know where they are going. Discourage complicated designs or those with many letters.

Once they have a reasonable idea, have them choose one square of felt to use as a background and another square to begin cutting. After they finish with the first cutout, they can help themselves to more felt from the pile on the table. Larger leftover pieces should go back on the table for the use of others. Cutting felt is not easy, even with good shears, and you may need to help. It is wise to cut all the pieces before beginning to glue. Use enough glue to hold the cut pieces securely, but not so much that the felt is soaked. A fresh marker with a broad tip will write on felt, but mistakes are permanent, so use it with care.

If your budget allows you the luxury of sequins or other decorations, use them, too.

Staple the upper edge of the felt to a 12-inch dowel and suspend by a string attached at the two ends.

Cartesian Diver

Requirements: plastic jars or squeeze bottles; soap; wash tub or plastic baby tub; soda straws; paraffin wax; a crayon; can; sauce pan; paper cup; needles and button thread; large paper clip.

Picture a transparent squeeze bottle. The container is completely full of water. Floating vertically under the lid is a small cylinder. When you squeeze the container, the cylinder sinks to the bottom. Release the pressure and the cylinder rises to the top again. That's a Cartesian diver.

When you look closely at the cylinder, you will see that it is floating because it is half-filled with air. When the container is compressed, the water pushes its way up the cylinder, compressing the air there. The water makes the cylinder too heavy to float, so it sinks. When the bottle is released, the compressed air shoves the water back out of the cylinder, and it rises again.

Place a saucepan on a stove or hot plate and bring to a slow boil. CAUTION: Do not use an open flame when working with wax. Place half a cake (two ounces) of paraffin wax in a clean can and float the can in the hot water. Add a third to half a crayon for color. Let the child choose the color. Mix the crayon and paraffin waxes slowly when they have melted. During the wait, have children write their names on the bottoms of aluminum pie plates using an indelible marker.

Fill a sink or tub to a depth of at least twelve inches with water at room temperature. Provide a footstool, if necessary, so that each child will be able to touch the bottom of the tub without difficulty. You should demonstrate how a wax form is made before allowing the children to try.

Float the aluminum pie plate on the surface of the water. Put on latex gloves. The instructor, always, should remove the can from the boiling water and pour the melted wax into the pie plate. Grasp the sides of the pie plate between the thumbs and forefingers. There should be a ten-second delay after the pouring of the wax to allow some of it to solidify and adhere to the pie plate.

Keeping the plate horizontal, the child will take three to five seconds to push the plate down through the water to the bottom of the tub. As the plate is immersed, the melted wax will rise in the water, solidifying as it floats upward to form a surrealistic moonscape. Do not hurry the process. If the wax is immersed too rapidly, the tracery will sag and break of its own weight as soon as it is lifted from the water. Caution children to keep their fingers to the side, out of the way of the melted wax. Even without gloves, they will not be injured if the wax contacts their hands under water; however, the wax is uncomfortably hot and may cause them to jerk or drop their pie plate.

Set the wax form aside to dry, avoiding direct sunlight. Expect some drooping. Once cooled, the wax is fragile, and few forms will survive a trip home.

PROJECTS FOR OLDER KIDS

Banners

Requirements: 16 to 20 felt squares, glue, four pairs of good scissors or sewing shears, construction paper, string, markers, three or four 36-inch dowels cut into 12-inch lengths, stapler

Pet Rocks

Requirements: rocks or rock site (alternative: cornstarch baking clay), washing tub with soap and brushes, paint and brushes, clear spray paint, scissors, yarn, felt scraps, glue, wiggly eyes

Day One. Take the children outside to a creek bed, gravel road, or other area where they can pick up a fist sized rock. Check each rock. They should not be too irregular, but some "character" is helpful. If necessary, the counselor can supply rocks. Have a pail outside the building where kids can scrub and dry them.

Color the rocks using Tempera or other inexpensive paints and set them on newspapers to dry. Write the child's name on the paper next to each rock to reduce arguments later. It is a good idea to coat each rock with clear spray paint after the children leave.

Camps in inner city locations may prefer to have the children use cornstarch clay to mold monster faces, which the teacher can bake dry between sessions in a 250 to 300 degree oven.

Day Two. Have glue, yarn, wiggly eyes, scissors, and small pieces of felt available. Cut the yarn into eighth-inch lengths and show children how to add fur by putting glue on the rock and then sprinkling the yarn pieces on the wet glue. Add longer yarn lengths to make tails or manes. The longer lengths will stay in place better if they are draped from one side of the rock to the other or are glued along a considerable length. Cut ears from the felt. The ears will not hold if glued only along their edges, so glue the whole felt piece to the rock. Add eyes and set aside again to dry. Have children name their pets.

Wax Forms

Requirements: wash tub or sink; aluminum pie plates; paraffin wax; a few crayons; can; sauce pan; latex gloves.

Wax forms take only seconds to make, but require several minutes for preparation. It is wise to have another activity going on. Choose your weather. The cooler the day, the more stable the wax forms will be.

There are many ways to make a diver if you understand the principle. This is one of them.

Ask the children to bring a clear squeeze bottle from home, but have some on hand in case they don't. Clear plastic bottles, such as plastic soda bottles, will do, but it is easier to get air out of regular squeeze bottles.

You can have the children make divers, or you can begin them yourself. Place no more than half a cake (2 ounces) of household paraffin wax in the bottom of a clean can and add a third to half a crayon for color. Put the can in a sauce pan containing water and boil the water to melt the wax. CAUTION: Do not use an open flame when working with wax. Stir to mix the melted crayon with the rest of the wax.

Add a few inches of water to a paper cup. Insert a soda straw about half an inch deep in the melted wax, place your finger over the upper end of the straw to keep the wax in the straw, and insert the straw into the water in the cup. Wait a minute for the wax to harden, and lay the straw on a paper towel to dry. Repeat until you have more divers than children.

You will need a couple of water-filled tubs deep enough to immerse a squeeze bottle comfortably. When the children arrive, have them wash and rinse their bottles and remove labels. Try to get all the soap, detergent, or soda pop out of the inside. Dump out the soapy water and refill the tubs with clean water. The water should be warm, to expel dissolved air and to reduce the probability of the bottle bursting when clutched for some time in a child's warm hands.

Distribute the wax-filled straws. Have the children cut their straws to a three-inch length. Insert the smaller loop of a paper clip into the bottom of the straw so that the diver will float vertically in the water with the open end down. Next, children should add and remove water from their diver until it barely floats.

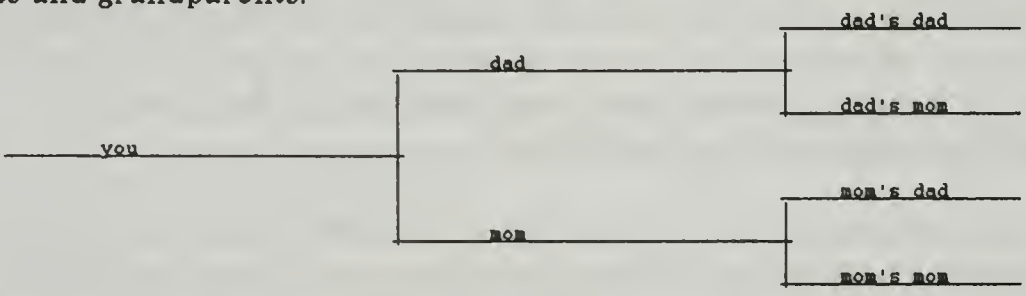
Fill the squeeze bottle to overflowing. Place the diver inside the bottle with the paper clip down. Hold the bottle lid under water and bump the air out of it. Holding a thumb over the bottle top to keep the diver inside, immerse the bottle in water and get any air out of it. Rotate the squeeze bottle top so it is open, slide it over the bottle, and screw it in place. Rotate the top to close it. If you do not have a squeeze bottle, compress the bottle between your fingers to dimple it a bit before screwing on the lid. Remove and dry the container. Squeeze the bottle to sink the diver and show that it works.

I suggest sending a note home to parents. Tell them that the bottle contains only water, but it may burst if dropped or heated, because there is no place for the liquid to expand. It would be a very bad idea to place the bottle on a television set, for example.

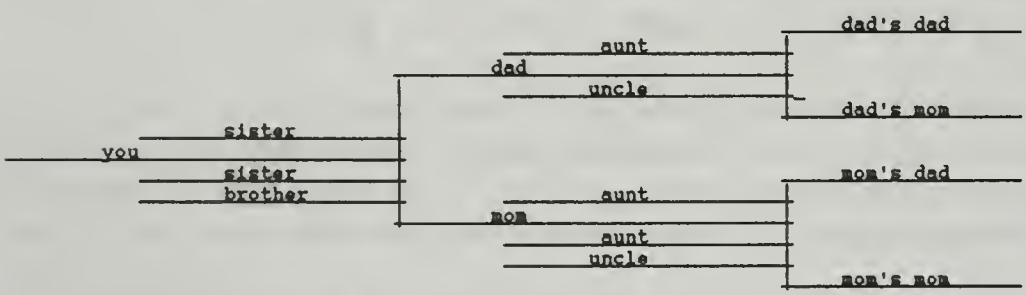
Family Trees

Project One. Requirements: construction paper and markers

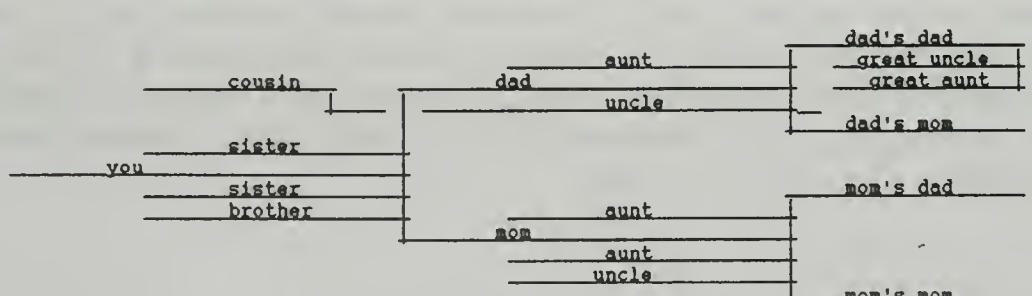
Distribute the following diagram or sketch it on chalkboard or an easel. Have each child copy the diagram on construction paper, replacing mom by their mother's name, dad by their father's name and so on. It is appropriate to use Pa-Paw, Grandpa Adams, or any other personal entry. Children raised by a single parent should omit one half the diagram. Say: "Lucky you! Your job is easier." Children whose parents have remarried may add additional brackets for step parents and grandparents.



Encourage the child to add brothers, sisters, aunts and uncles:



A child who shows enough interest can add the brothers and sisters of grandparents or first cousins. I've shown one of each.



Project Two. Requirements: about ten 36-inch long by 1/4-inch diameter wooden dowels, 70 flat washers with 1/4-inch centers, string, scissors, about 120 red and blue rigatoni beads, blue and red tempera or markers.

Before the class begins cut each 36-inch dowel in half. Then cut half of the 18-inch pieces in half.

Give each child the following materials: one 18-inch dowel, two 9-inch dowels, seven washers, four blue and four red rigatoni beads. There should be string, scissors, and markers or paint handy. Put the remaining beads in the middle of the table.

Here are the instructions to complete the project. Color one of the shorter dowels red and the other blue. Boys should color the longer dowel blue and girls should color it red. Cut a 9-inch piece of string. This is easy, since that is the length of the shorter dowel. Tie a washer to one end of the string and slide a blue bead down the string to the washer. The blue bead represents the father's father. There is no problem if the grandfather has died or left the community. Repeat the process with a second string and a red bead to represent the father's mother.

Cut an 18-inch string. Tie one end to a washer and slide that washer to the middle of the blue 9-inch dowel. Hang the first two beads from the two ends of this dowel. Thread a blue bead on the longer string up to the stick to represent the father. If the father had brothers or sisters, get beads from the middle of the table and thread them on the string above the father, red for women and blue for men. Now hold the whole thing up by the end of the longer string. This group represents the father and his parents.

Cut two more nine-inch strings and put washers and red and blue beads on the ends of these, as you did before. Tie an 18-inch string to a washer, thread it on the red 9-inch dowel, and tie the new 9-inch strings to the ends. Thread a red bead for the mother down the longer string and add red and blue beads for the mother's brothers and sisters. Hold the group up to represent the mother's family.

Tie an 18-inch string to the last washer and slide it to the middle of the 18-inch dowel. Tie the mother's family to one end and the father's to the other. Add a bead to the new 18-inch string to represent the child, blue for a boy, red for a girl. Add blue and red beads for each brother and sister. Hang the finished mobile to represent the whole family. Balance it beginning at the bottom and working up.

Families with Separated or Single Parents. If a child's parents have remarried and there is another set of grandparents, use a third 9-inch dowel to represent the step parent's family, and hang it from the center of the 18-inch dowell. If the child recognizes four pairs of grandparents, hang one 18-inch dowel below the center of another with the corresponding families at the ends. Use a red dowel for the biological mother and a blue dowel for the biological father.

Suppose a child is being raised by a single parent, the mother in this example. Use a red 9-inch dowel as before to represent the grandparents, the mother, and the aunts and uncles on her side. Tie the end of the string for the mother's family to a washer. Tie an 18-inch string to the same washer and thread the washer on to a 9-inch dowel, red for a girl or blue for a boy. Slide the red or blue bead representing the child down the 18-inch string to this dowel. Slide red and blue beads for sisters and brothers directly on the upper dowel on either side of the washer and string. Put a washer on either end of the dowel and tie a loop of string around either end to keep these washers and beads from sliding off.

If you wish, write family names on adhesive labels and attach them to the beads.

Illustrator

Requirements: a short poem or story; string or rope; stapler; clothespins or paper clips; construction paper; markers

Some preparation by the teacher is required. Choose a short, unfamiliar story or poem. The best story I have found for this activity is James Thurber's "Last Flower." Many of Shel Silverstein's poems are fine, as are the fables of Aesop and the tales of the brothers Grimm. Churches will be pleased to hear that short, less familiar Bible stories do well, also.

Write out the story with a marker (or computer) in large letters. Then use scissors to cut the story into pieces, about three times as many pieces as children. Each piece should contain at least a noun, and preferably a phrase or simple sentence. On the back of each piece, write a number, 1, 2, 3, ..., to allow the pieces to be placed in the proper order later. When you have all the pieces, take them one at a time, recopy the number inconspicuously on one side of a piece of construction paper, and staple the piece itself on the other, near the bottom. Mix up the papers so they are not in order. Vary the construction paper colors from one piece to the next and stick to light colors.

When the children arrive, seat them at a table with plenty of markers and hand each kid two pieces of construction paper. Don't tell them the story or poem ahead of time. Just ask them to read the noun, phrase, or sentence at the bottom of the page, and then use their markers to draw an illustration to go with the words. Ask for simple, rather than complicated drawings, since each child is to draw "several." As each drawing is finished, give the child a new blank page to complete. It doesn't matter if one child draws five sketches while another child draws one detailed drawing. Draw one or two yourself to keep interest alive. As the pictures are finished, put them in order. Finally, hang the pictures on a string or clothesline, and have the kids walk along the line reading what they have just illustrated. If the story is well chosen, this display will be a hit with parents and sponsors.

Life Lines

Requirements: posterboard, pencils, markers, glue, magazines or catalogs

Each child should put a dot in the center of the posterboard and then use a pencil to draw an outward spiral that makes three or four circuits before ending with three dots near the outside edge. If the spiral looks all right, he or she should go back and outline it boldly with a marker of any color. Next, the child should find the halfway point and mark inconspicuously. I recommend a yellow dot. Mark the first and third quarters with yellow dots also.

Explain that the center dot represents the day the child was born and the line represents his or her life. The first yellow dot is the age of 10, the one at the middle is the age of 20, the third is age 40, and the three dots at the end begin at age 80. Tell the kids to illustrate the life they want to live by drawing pictures, writing words, and gluing images from magazines or catalogs.

If the kids look like they will finish ahead of time, ask an outgoing child to describe his or her life line, and other children will follow naturally.

To provide time to take an interest in the process, the teacher should do her own (his own) life line ahead of time. Expect surprises. Once an 8-year-old girl who disliked an unpopular 9-year-old boy in the class included his death on her life line. Only when I took it from the wall, two weeks later, did I realise what she had done. If necessary, tell the kids they are drawing their own lives, not anyone else's.

Potato Prints

Requirements: potatoes (or another hard, raw vegetable), metal nail files or plastic picnic knives, one metal paring knife, tenpenny nails, powdered paints, posterboard or construction paper, paper towel, soft pencils, sponges, cookie pan

Cut potatoes in half the "short way" so that each child will have a half. The child should choose a simple pattern such as a circle, square, triangle, star, or an initial letter. Dry the potato on a towel and use the pencil to draw the symbol on the face of the cut potato. Use the plastic knife or nail file to cut away the edges and center, and poke holes with a nail to leave the symbol as a raised image. If needed, the counselor may offer help with his or her knife, but it isn't a good idea to have a roomful of young children wielding sharp knives.

Use the desired color to wet a sponge and lay it on a newspaper or cookie pan. Press the potato against the sponge and then against a piece of scratch paper to see how it looks. When the potato is ready, make images with the desired color on a piece of construction paper or poster board. Children should be encouraged to try various colors and to exchange potatoes.

Ring Wing Gliders

Requirements: paper clips, heavy 8-1/2 by 11 paper, straight soda straws, scissors, rulers

Have the children measure and cut two 11-inch strips from their paper, one 3/4 inch wide and the other 1-1/2 inches wide. Fold the narrow paper in half to make a doubled strip 5-1/2 iches long. Slide the larger loop of a paper clip into each of the two ends of the soda straw. Loop the wider strip of paper into a circlet about 3-1/2 inches in diameter and secure the loop to the soda straw by sliding the overlapped ends under the paper clip. The straw should lie within the circlet, not below it. Make another circle with the folded narrow strip, and slide it under the other paper clip. Align the two circles as closely as possible.

Launch the glider, straw down and the small end forward, with a steady push rather than a sharp thrust. Performance can be varied by cahanging the diameter of the larger ciclet, so experiment. It works. [2]

Silhouettes

Requirements: light source, black paper or tissue (alternative: artist's charcoal or a black crayon), white posterboard, newsprint, soft pencil, scissors

Silhouettes were popular in Jane Austen's day, 200 years ago, and they are still appealing today; however, we don't have to depend upon candles for light.

If push comes to shove, a bare light bulb that's ten feet from the subject or a flashlight can serve as a light source, but computer camps are apt to be held at a school or church, where slide or overhead projectors are common. Use one of the latter, if you can.

Seat the subject on a stool or chair with a low back, locate the light source at the same height as the head, and tape a piece of newsprint to the wall where it will catch the shadow of his or her profile. Use a pencil to draw the silhouette. Work rapidly, because any movement by the subject may require you to start over.

After the teacher draws the first silhouette to demonstrate, the child in the chair comes to the wall to draw the next. Continue, with each child sitting first, and then drawing, until everyone has had their turn. The last child to sit can draw the teacher.

Attach the newsprint securely to the black paper, and cut out the silhouette with scissors. If you can't find black paper, go around the penciled outline with a black marker or fill in the outline with a black crayon or charcoal. Mount profile cutouts against a white or pastel background. The artist should sign and date his or her work. Kids may not appreciate their own silhouettes, so give them to bus drivers to hand to parents.

Yarn Art

Requirements: yarn of different colors, glue, white or pastel tissue paper, paper cups, stirring rods or straws.

Before the children arrive, cut colored yarn into pieces. There should be a few strands as long as 18 inches, but most should be 5 to 10 inches long, and there should be a stock of 1-inch stubs.

Distribute tissue paper to each child. If there are colors, let them choose. Mix glue and water in equal parts in the bottom of paper cups, about one cup for each two children. Have the children lay the yarn in patterns on the tissue paper. An outside border is recommended, but the border can have any shape. After arranging the yarn, beginning with the longest, the child should dip the yarn in the glue and put it in place on the paper. When the glue has dried sufficiently, cut the tissue around the outside border and hang the result in a window.

Children may prefer several smaller pieces to one large one.

References

(1) Steven Caney, "Kids' America," Workman Pub. Co., New York, 1978, ISBN 0-911104-80-1

(2) Gloria Gaither and Shirley Dobson, "Let's Make a Memory," Word Books, Waco, TX, 1983; ISBN-0-8499-2966-0

GROUP	MON	TUES	WED	THUR	FRI
I					
II					
III					
IV					

Week beginning _____

Crafts

I am reconsidering whether young children should color raw macaroni and glue it to construction paper as a craft project: on the long ride home, they peel the macaroni from the paper, throw it at each other, or eat it.

JOB DESCRIPTIONS

It would be a mistake to assume that persons hired for computer camp jobs will know what is expected of them, even if they have had previous experience. Detailed job descriptions give employees clear instructions concerning their employment, protect them from arbitrary supervision, and aid communication between employee and supervisor.

The job descriptions in this appendix are those which I use, slightly modified for the purpose of publication. The details will not apply to your camp, but I have included them as a guide to writing your own. There is a great deal of repetition, especially between the descriptions of the crafts and recreation counselors. If your sponsoring organization does not have its own format for job descriptions, consider using the one that follows.

Job Title

Term of Employment: Give first day, last day, and any holidays.

Hourly Rate: Give a specific rate, if possible.

Work Schedule: Give starting time, ending time, lunch hour or other breaks, and the number of hours per week.

Equal opportunity statement.

Brief description of overall duties

Experience or other requirements

Daily Duties

Special duties and responsibilities

Seventy-odd years old, he was sitting on the porch when my friend came to ask whether the least'un could come to our summer program. She was a little surprised at his age and blurted out, "Is he your son?"

"That's what they tell me," came the placid reply.

He's gone now. So's the boy_ grew up, went to college, and left town.

JOB DESCRIPTION

Computer Room Director

Term of Employment: Friday, May 30 to Saturday, July 26, 1997 with an Independence Day holiday.

Hourly Rate: Based upon experience

Work Schedule: 25 hours per week, Monday through Friday: 7:45 AM to 1:15 PM.

NOTE: In the description which follows, the male pronoun has been used for convenience; however, male and female applicants are equally eligible for this position. The camp is particularly interested in training and employing handicapped adults and members of minorities.

The computer room director must be capable of planning and teaching computer lessons appropriate to the understanding of young children. The primary computer objectives of the camp will be met if students can load and run programs, use the software for an appropriate period, and end their sessions by turning off the computer and returning disks to a designated place without damage to the disks or the equipment. A secondary objective is the teaching of computer graphics, elementary programming in LOGO or BASIC, and the learning that arises when children make conscientious use of educational software.

The computer room director must be punctual and reliable. At times there will be three or four children demanding attention simultaneously and loudly, and it is important to keep them happy and satisfied. Patience and intelligence are essential, and previous experience working with 7 to 12-year-olds is desirable. The director must earn the children's respect and liking (in that order!) by the firm and agreeable way in which he handles their problems.

Some previous experience with personal computers and familiarity with camp software is expected; furthermore, the director is expected to work constantly at improving computer knowledge and skills.

The director will supervise the activities of the computer room assistant (CRA) and will work with the recreation and crafts counselors.

Daily Duties

The director will report to the Buckhorn School at 7:45 and prepare the computer room for the day's lessons.

Up to twenty 7 to 12-year-olds will arrive fifteen minutes later after eating their morning snacks. The director will make announcements, assign computers, distribute software, and conduct the daily lesson. Once the lesson is over, the director will move from computer to computer assisting campers with their problems. As a general rule, the director will assist by telling students what to do rather than by doing it himself. The camper, not the director, should hold the mouse or joystick and type the responses.

At least once during each period the director will go from computer to computer noting which programs are in use by each camper and making an appropriate record. These records will be corrected and completed at the end of each period.

During the lunch break, the director will join the campers. Before they finish, he will leave to get afternoon snacks (pop and candy) and bring them to the school.

When the younger children return to the computer room after lunch, they will be served snacks away from the computers. While snacks are being eaten, the director will demonstrate computer software, and the CRA will collect and store leftover snacks.

When the camp ends at 1:00 PM, the children will leave for one of the other rooms, and the director will collect and file the day's records.

The director is responsible in a medical emergency requiring immediate care. The CRA should be asked to supervise the computer room. No lessons will be attempted in the absence of the director. The child should be taken without delay to the Buckhorn Clinic, the clinic should be provided with a copy of the child's registration slip, and the Children's Center and School Office should be notified. One of the junior counselors or a school employee may assist the clinic in locating and communicating

with the child's parent or guardian. In less serious emergencies, the parent should be called from the school office and asked to come for the child.

On occasion the director may leave the CRA in charge of the computer room for a short period. The CRA should not be asked to teach lessons when the director is not present. If the director must be gone for an extended period, the CRA will accompany the children to another room and assist their supervision by the recreation or crafts counselor.

The computer room director should maintain a record of his work hours and turn it in to the camp director at designated times.

There is a day provided at the beginning of the summer to prepare for camp and a day at the end of the summer to clean all the rooms and restore them to the order requested by the school. There will be a weekly staff meeting, and an exit interview may be requested.

It wasn't his day. First, a wild eight-year-old bit him on the finger, explaining in a reasonable tone, "He put it in my mouth." Not an hour later, he was bitten again. The explanation this time was: "He sat on my head." I verified that he had. His sister was in tears over his persecution, but the cannibalism subsided by snack time, and he was able to smile when I asked him what flavor he was.

JOB DESCRIPTION

Computer Room Assistant

Term of Employment: Friday, May 30 to Saturday, July 26, 1997 with an Independence Day holiday.

Hourly Rate: Minimum wage

Work Schedule: 25 hours per week, Monday through Friday: 7:45 AM to 1:15 PM. Thirty minutes (unpaid) for lunch.

NOTE: In the description which follows, the male pronoun has been used for convenience; however, male and female applicants are equally eligible for this position. The Children's Center is particularly interested in training and employing handicapped adults and members of minorities.

The computer room assistant (CRA) must be punctual and reliable. At times there will be three or four children demanding attention simultaneously and loudly, and it is important to keep them happy and satisfied. Patience and intelligence are essential, and previous experience working with 7 to 12-year-olds is desirable. The CRA must be old enough to be regarded by the children as a supervisor rather than an older camper. The CRA must earn the children's respect and liking (in that order!) by the firm and agreeable way in which he handles their problems.

Previous experience with personal computers is valued, but not required; however, the CRA is expected to work constantly at improving computer knowledge and skills.

Daily Duties

The CRA will report to the Buckhorn School at 7:45, plug in the computer cords, set out computer disks, turn on the air-conditioner, and ready the room for the day's activities. After this, time may be spent learning how to use software in the camp library.

Up to twenty 7 to 12-year-olds will arrive at 8:00 after eating their morning snacks. The CRA will assist the computer room director in assigning computers, distributing software, and conducting the daily lesson. Once the lesson is over, he will move from computer to computer assisting campers with their problems. At times the CRA will seat himself with two or more campers to help them explore more challenging programs.

As a general rule, the CRA will assist by telling students what to do rather than by doing it himself. The camper, not the CRA, should hold the joystick or mouse and type the responses. The CRA is a helper and does not have the responsibility or authority to give orders or exercise discipline.

When the class ends, the CRA will collect and replace computer disks and documentation left by the departing children.

During the lunch break, the CRA may join the campers to eat lunch. The CRA has no assigned duties for the first thirty minutes of the lunch hour. He may use this time, if he likes, to play on a computer.

When necessary, the CRA will assist other counselors in supervising the children after lunch. The younger children will return to the computer room, where they will be served pop and candy away from the computers. While snacks are being eaten, the director will demonstrate computer software, and the CRA will collect and store leftover snacks. If campers spill their snack, the CRA will clean up.

When the camp ends, the children will leave for one of the other rooms, and the CRA will remain to finish print jobs, to collect and store computer disks and documentation, to unplug the computers and air conditioner, to sweep the computer room, and to remove garbage.

From time to time the CRA may be left in charge of the computer room for a short period while the director goes to the office, attends to medical emergencies, or is otherwise occupied. The CRA will not be asked to teach lessons when the director is not present.

The CRA should maintain a record of his work hours and turn it in to the camp director at designated times.

There is a day provided at the beginning of the summer to prepare for camp and a day at the end of the summer to clean all the rooms and restore them to the order requested by the school. An exit interview may also be requested.

JOB DESCRIPTION

Crafts Counselor

Term of Employment: Friday, May 30 to Saturday, July 26, 1997 with an Independence Day holiday.

Hourly Rate: Based upon experience and qualifications

Work Schedule: 30 hours per week, Monday through Friday: 7:30 AM to 1:30 PM.

NOTE: In the description that follows the female pronoun has been used for convenience; however, male and female applicants are equally eligible for this position.

General Description

The crafts counselor is not a baby sitter. She does not watch children; she leads them. For four hours daily she will have independent responsibility for organizing and carrying out arts and crafts activities with four different groups of 10 children aged 7 to 12. At other times, she will assist two other adult counselors in leading all 40 campers. She will use and provide guidance to a teenaged junior counselor assisting with crafts.

The crafts counselor must have sufficient experience to provide her own daily schedule of activities, the authority to handle a roomful of active children, and the maturity to respond appropriately to unexpected situations. She must maintain discipline through respect, good will, and the use of rewards implicit in the job situation (such as who gets to go first), rather than through punishment. Punctuality and good work habits are essential. It is particularly important that she be able to work cooperatively with the camp director, the recreation counselor, and the junior counselors.

Specific Responsibilities

Prior to the beginning of the camp the crafts counselor will consult the camp inventory and determine what supplies and facilities will be available on a daily basis. There is a modest budget for materials. Should she need additional items that are within that budget, she should provide a written list of her needs to the camp director. A weekend's notice will usually be required.

Prior to camp each day she should have a tentative list of activities appropriate to four different age groups in the overall range from 7 to 12. Since the younger children have a short attention span, as many as three different activities should be planned for them. Some activities may be repeated from group to group and from day to day before interest wanes. Since new children arrive every two weeks, a two-week schedule is all that is required. The counselor must have in hand indoor activities for rainy days, for mornings when the grass is too wet, and for afternoons when the sun is too hot for outdoor play. She should heed and respond to the children's suggestions, but it is not a good idea to ask children to vote on what to do.

She must get to the Buckhorn School before the first busload of children is discharged, usually 30 minutes before starting time. With the help of the junior counselors, she must assure adequate supervision for the children's free recreation, but organized games are not required. She will also see that her craft materials are ready for the first period.

She should meet, or ask a junior counselor to meet, each arriving van to open doors and direct children. She may also employ a junior counselor in fetching craft supplies or in room setup.

Once all the children have all been transported, she should assist with snacks. It is important that there be an accurate count of how many children accept a snack. Children are required to take the entire snack, but once they have done so they may give portions of it away. Ordinarily, snacks will be served by the school kitchen staff.

After the snack, the camp will divide into four groups of children. The counselor will take the 10-person group assigned to her and begin crafts activities assisted by a junior counselor. The children should enjoy themselves. There is no reason why they cannot talk quietly with each

other as long as they do not disturb concurrent school sessions, nor is there any reason to make them stay in assigned seats. If children have something interesting to do, little discipline will be required to maintain control of the group.

The crafts counselor will need to provide a place to store the children's art and to display it before it is sent home to parents.

The craft activities will last approximately 50 minutes, when there will be a restroom break. Since restrooms quickly become littered and dirty if their use is not supervised, the usual policy is to send children to restrooms in groups under the supervision of a junior counselor of the appropriate sex. The children should be at the computer room door at the end of the hour. Younger children may need to go to the bathroom at other times, and this is permissible if they go one at a time and return promptly.

For the second period the crafts counselor will have a different age group, but some repetition of the previous hour's activities may be possible. In any event, she will supervise this group until the next restroom break.

Groups will change every hour. The activity period before lunch should be ended early enough that all children will have had a chance to wash for lunch by 10:55.

The kitchen staff will let her know when they are ready to serve. Children who run or shove should be moved to the end of the line.

The luncheon period is a work hour, not a lunch hour, so the crafts counselor may need to help the younger children before she eats. All children must sign in and are served identical meals in compliance with federal regulations. Encourage, but do not force, children to eat unfamiliar foods.

Children remain seated when they have finished eating. If trash is not returned to the kitchen window, a junior counselor will go from table to table with a garbage bag to collect it. About 11:35 the children will return to their rooms. The two older groups will gather in one room, while the younger children will gather in another.

Once the group has returned, the crafts counselor will assist in supervising the sale of candy and pop to the children. There is a limit of one pop and one candy bar per child per day. Counselors should not set aside

candy or pop for themselves before the children are served. Pop and candy may only be dispensed at the snack period after lunch. Incidentally, it is not appropriate for counselors to be eating snacks or drinking pop any time that children are not able to do the same. For the same reason, counselors should not display or use tobacco products during working hours.

There will probably be one activity period after lunch. Conduct it and send the children to the restrooms as usual.

The buses will depart as soon as children riding them return from restrooms. Since the vans are too small to take all the children at once, one counselor must supervise the waiting children. Junior counselors should spend this time cleaning the activity rooms, and the crafts counselor should remind them of this responsibility and inspect their work. When the last child leaves, the counselor may be asked to check that doors are locked before she leaves for the day.

Do not deprive children of pop and candy as a punishment. The only negative punishment available to the crafts counselor is the right to ask children to sit out for five to ten minutes, and this should be done rarely. The milder punishment of moving children to the end of a line is usually just as effective. Use rewards, not punishment, to control behavior. Junior counselors do not have the authority to punish, nor should the crafts counselor punish children in support of a junior counselor.

On the last day of each two-week camp, the schedule changes. The van runs, morning snack, and first two activity periods take place as usual; however, at 10 PM, up to 20 children are taken to the computer room, while a smaller group, ordinarily the best-behaved, go with the recreation and crafts staff to the playground below the Buckhorn Dam, where a charcoal fire is prepared and hamburgers or hot dogs are roasted. The rest of the meal is ordinarily finger foods, such as potato chips and fruit. When the lunch has been laid out, the children in the computer room are transported to the picnic area and served lunch. On this day, the children receive their snack with the meal, free of charge. After lunch the recreation and craft staff members organize a (voluntary) water fight using sponges and water pistols. Water ballons tend to hurt without breaking, but they may be used at the discretion of the staff.

About 12:30 the children pick up trash (including burst water ballons) and return to the picnic area, where attendance prizes are distributed to

everyone. The children are taken directly home from the picnic area, so craft projects and other materials need to be taken home the previous day. If all of the children cannot be taken in the first vanloads, one or more counselors must remain at the picnic area with them until the van(s) return for the second trip.

There is a day provided at the beginning of the summer to prepare the crafts room and a day at the end of the summer to clean all the rooms and restore them to the order requested by the school. An exit interview may also be requested.

The crafts counselor should maintain a record of her work hours and turn it in to the camp director at designated times. She will also maintain an activity sheet listing what is done with each group each day. The activity sheet should be given to the camp director on the first morning after each week of activity.

I found out where he lived from a neighbor, who wasn't sure his parents would let him attend, but I was used to parents who were protective of first graders, and, anyway, I wanted to try. As I got out of my car, I heard music from the old house, and when I reached the open door, I found live musicians, fiddling and picking, so I waited, foot tapping, until they finished. I apologized for the interruption, spoke my pleasure at what I had heard, and told them about my computer camp. The father listened without changing expression and said they'd talk it over. He didn't sound encouraging. The mother stood in the background, as mothers do in this patriarchal society, her face lined and older than her years. I left with a promise to return with the van on the first day of computer camp.

There was a chill in the air and dew on the grass as I returned on Monday morning to the house. There was no sign of life, doors and windows closed, a common signal that communications were closed, and the consultation had ended in a refusal. I waited the two minutes that I spare for each house on the first day, put the van into reverse, and had begun to creep backwards when the door flew open and they ran across the wet grass to me, mother and son, the boy in his good school clothes, and the mother, barefoot and hair flying, now looking not much older than her son. "Welcome," I said, "I'll wait longer next time."

JOB DESCRIPTION

Recreation Counselor

Term of Employment: Friday, May 30 to Saturday, July 26, 1997 with an Independence Day holiday.

Hourly Rate: Based upon experience and qualifications

Work Schedule: 30 hours per week, Monday through Friday: 7:30 AM to 1:30 PM.

NOTE: In the description which follows, the male pronoun has been used for convenience; however, male and female applicants are equally eligible for this position.

General Description

The recreation counselor is not a baby sitter. He does not watch children play; he leads their activity. For four hours daily he will have independent responsibility for organizing and carrying out recreation activities with four different groups of 10 children aged 7 to 12. At other times, he will assist two other adult counselors in leading all 40 campers. He will use and provide guidance to a teenaged junior counselor assisting with recreation.

The recreation counselor must have sufficient experience to provide his own daily schedule of activities, the authority to handle a roomful of active children, and the maturity to respond appropriately to unexpected situations. He must maintain discipline through respect, good will, and the use of rewards implicit in the job situation (such as who gets to go first), rather than through punishment. Punctuality and good work habits are essential. It is particularly important that he be able to work cooperatively with the camp director, the crafts counselor, and the junior counselors.

Specific Responsibilities

Prior to the beginning of the camp the recreation counselor will use the camp inventory to determine what equipment and facilities will be available on a daily basis. There is a modest equipment budget. Should he need additional items that are within that budget, he should provide a written list of his needs to the camp director. A weekend's notice will usually be required.

Prior to camp each day he should have a tentative list of activities appropriate to four different age groups in the overall range from 7 to 12. The younger children have a short attention span, and as many as three different activities should be planned for them. Some activities may be repeated from group to group and from day to day before interest wanes. Since new children arrive every two weeks, a two-week schedule is all that is required. He must also plan indoor activities for rainy days, for mornings when the grass is too wet, and for afternoons when the sun is too hot for outdoor play. He should heed and respond to the children's suggestions, but it is not a good idea to ask children to vote on what to do.

The recreation counselor must get to the Buckhorn School before the first busload of children is discharged, usually 30 minutes before starting time, and supervise campers as they get there, but organized games are not required at this time. He should meet, or ask a junior counselor to meet, each arriving van to open doors and direct children. He may also employ a junior counselor in fetching recreation supplies or in room setup.

Once the children have all arrived, he should assist with snacks. It is important that there be an accurate count of how many children accept a snack. Children are required to take the entire snack, but once they have done so they may give portions of it away. It is probable that snacks will be served by the school kitchen staff.

After the snack, the camp will divide into four groups of children. The counselor will take the 10-person group assigned to him and begin recreation assisted by a junior counselor. The children should enjoy themselves.

If it is not too hot or rainy, recreation is conducted outdoors; the school gymnasium may be available at selected times on rainy days, but it is not available for general use.

The counselor may be asked to let the group play hide-and-seek or dodge-ball in a room with the lights out. The answer is: "No."

The recreation counselor must feel comfortable in three different roles:

Initiator/Coach, deciding what is to be played, defining the rules, choosing team leaders, rotating those assignments, and providing the necessary equipment and playing field.

Referee/Scorekeeper, maintaining order, interpreting rules, and keeping things running smoothly. Accurate scorekeeping isn't a priority, but a camper who is poor athlete may get a kick out of being designated scorekeeper.

Player, showing how the game is played, demonstrating good sportsmanship, and having fun.

The recreation counselor must insist on cheerful participation by the junior counselor who assists him. Encourage, but do not force, participation by children.

Recreation is not limited to "games." It also includes stunts (like the limbo), singing or acting, and story-telling. Since the kids can watch TV at home, the counselor should not park the kids in front of a TV screen without a very wet day and an exceptional program to justify it. Even so, the counselor must continue to lead, so the TV experience becomes a part of his program rather than a substitute for it.

Recreation periods last 50 minutes, after which the children should be given a chance to use the restrooms. Since restrooms quickly become littered and dirty if their use is not supervised, the usual policy is to send children to restrooms in groups under the supervision of a junior counselor of the appropriate sex. The youngest children may need to go to the bathroom at other times, and this is permissible. The children should be at the door of the computer room at the end of each hour.

For the next period the recreation counselor will have a different age group, but some repetition of the previous hour's activities may be possible. In any event, he will supervise this group through the next restroom break.

Groups will change every hour. The activity period before lunch should be ended early enough that all children will have had a chance to wash their hands for lunch by 10:55. Children who wash up should not stand in the back of the lunch line behind children who did not. The kitchen staff will let him know when they are ready to serve. Children who run or shove should be moved to the end of the line.

The luncheon period is a work hour, not a lunch hour, so the recreation counselor will be expected to help the younger children get served before he eats. All children must sign in and are served identical meals in compliance with federal regulations. They should be encouraged, but not forced, to eat unfamiliar foods.

Children remain seated when they have finished eating. About 11:35 the children will be lined up at the door by a counselor and escorted back to their rooms. The older children will go to one room and the younger children to another.

Once the group has returned to its room, the recreation counselor will assist in supervising the sale of candy and pop to the children. Children are limited to one pop and one candy bar each day, and pop or candy may not be eaten except during the snack period after lunch. Counselors should not set aside candy or pop for themselves before the children are served. Incidentally, counselors should not eat snacks or drink pop at a time when the children are not permitted to do so. It is also inappropriate to display or use tobacco products during work hours.

There may be an activity period after lunch. When the last recreation period is complete the children are sent to the restrooms as usual.

The buses will depart as soon as children riding them return from restrooms. Since the vans are too small to take all the children at once, one counselor must supervise the waiting children. Junior counselors should spend this time cleaning the activity rooms, and the recreation counselor should remind them of this responsibility. When the last child leaves, the counselor may be asked to check that doors are locked before leaving for the day.

On the last day of each two-week camp, the schedule changes. The van runs, morning snack, and first two activity periods take place as usual; however, at 10 PM, up to 20 children are taken to the computer room, while

a smaller group, ordinarily the best-behaved, go with the recreation and crafts staff to the playground below the Buckhorn Dam, where a charcoal fire is prepared and hamburgers or hot dogs are roasted. The rest of the meal is ordinarily finger foods, such as potato chips and fruit. When the lunch has been laid out, the children in the computer room are transported to the picnic area and served lunch. On this day, the children receive their snack with the meal, free of charge. After lunch the recreation and craft staff members organize a (voluntary) water fight using sponges and water pistols. Water balloons may be used, but all too often they hurt the person they hit, but burst on the ground. Overall responsibility for recreation at the picnic rests with the recreation counselor.

About 12:30 the children pick up trash (including burst ballons) and return to the picnic shelter, where attendance prizes are distributed to everyone. The children are taken directly home from the picnic area, so snack accounts should be settled on the previous day. If all of the children cannot be taken in the first vanloads, one or more counselors must remain at the picnic area with them until the van(s) return for the second trip.

Children may not be denied their right to buy pop and candy. A punishment available to the recreation counselor is the right to ask children to sit out for five to ten minutes; however, this should be done rarely. The milder punishment of moving children to the end of a food or snack line is usually just as effective. Use rewards, not punishments, to control behavior. Junior counselors, incidentally, do not have the authority to punish, nor should the recreation counselor order punishment in support of a junior counselor.

The recreation counselor should maintain a record of his work hours and turn it in to the camp director at designated times. He should also prepare an activity sheet listing daily activities by groups and by periods. This sheet should be given to the director at the beginning of the first morning after each week ends.

There is a day provided at the beginning of the summer to prepare for recreation and a day at the end of the summer to clean all the rooms and restore them to the order requested by the school. An exit interview may also be requested.

I was driving the van back home on a hot afternoon. A National Guard helicopter went overhead, following the hill. A girl on the front seat spoke up, "They found my uncle's marijuana, yesterday." There was a silence while I tried to think of a suitable reply. Then she spoke again. "I mean, she said, "they found the marijuana that someone planted on my uncle's farm."

That's what I thought she meant.

JOB DESCRIPTION

Junior Counselor

Term of Employment: Friday, May 30 to Saturday, July 26, 1997 with an Independence Day holiday.

Hourly Rate: Minimum wage

Work Schedule: Thirty hours per week, Monday through Friday: 7:30 AM to 1:30 PM, typically

NOTE: In the description which follows, the female pronoun has been used for convenience; however, both a male and a female applicant will be hired.

General Description

The junior counselor is not a baby sitter. For four hours daily she will assist an adult counselor in organizing and carrying out arts and crafts or recreation activities with four different groups of 10 children aged 7 to 12. At other times, she will assist the entire staff in supervising all 40 campers.

The junior counselor must have sufficient maturity to respond appropriately to minor emergencies, the personality to get reasonable cooperation from a roomful of active children, and the energy to participate enthusiatically in each day's activities. She must maintain order through positive responses to children's needs and through the use of rewards implicit in the job situation (such as who gets to go first). She is not authorized to restrain or punish a child. Punctuality and good work habits are essential. It is important that she be able to work cooperatively with the camp director, the recreation counselor, the crafts counselor, and other junior counselors.

Specific Responsibilities

Prior to the beginning of the camp the junior counselor will meet with the camp director to discuss her general responsibilities. As soon as the camp begins she will receive specific instructions from the adult counselors.

She should arrive at the Buckhorn School 30 minutes before the camp begins. Electronic games, tape recorders, and pocket radios should be left at home. She should report to the adult counselor in charge, who will assign her to watch the children at play or to prepare one of the rooms for the day's activities. If she is on duty outside when a van arrives, she should move children out of the way and help the arriving passengers leave the bus. She should take particular care that the front door is not opened while the rear door is in use. She may be requested to cross the highway to the Children's Center for recreation equipment or craft supplies.

Once all the children have been transported, she should assist with snack distribution. It is important that there be an accurate count of how many children accept a snack. Children are required to take the entire snack, but once they have done so they may give portions of it away. She is welcome to the same morning snack as the children, but should not be eating or drinking anything unavailable to them such as pop or candy. If she chooses to comment about the food, the comment should be positive.

After the snack, the camp will divide into four groups of children. The junior counselor will accompany the 10-person group assigned to her and begin crafts or recreation activities under the supervision of an adult counselor. If not otherwise assigned, she should serve as a role model by playing the game or engaging in the craft activity. The children should enjoy themselves. There is no reason why they cannot talk with each other as long as they do not disturb concurrent school sessions, nor is there any reason to make them stay in assigned seats; however, they should not slide school desks around, get into school supplies, or enter supply lockers.

The junior counselor should remember that children are people, not objects. It is not appropriate to pick them up, carry them on the shoulders, or wrestle with them. The junior counselor is a friendly supervisor, not a playmate. In the event of a fight or other inappropriate activity, she may get between quarreling children, but she should not strike or hold them. Computer campers are not in treatment, and they do not require therapy.

As role models, even junior counselors who are old enough to buy tobacco should not use tobacco products within sight of the children, before camp, during camp, during breaks, or after camp. Tobacco should be kept out of sight.

Activities will last approximately 50 minutes, when there will be a restroom break. Since restrooms quickly become littered and dirty if their use is not supervised, the usual policy is to send children to restrooms in groups under the supervision of a junior counselor of the appropriate sex. The children should be at the computer room door at the end of each hour. The younger children may need to go to the bathroom at other times, and this is permissible if they go one at a time and return promptly. The adult counselor will decide whether such children require an escort.

For the next period there will be a different age group, but some repetition of the previous hour's activities may be possible. In any event, she will assist the adult counselor as before.

The luncheon period is a work hour, not a lunch hour. When the junior counselor arrives with the children she will help with the younger children if necessary before she eats. All children must sign in and are served identical meals in compliance with federal regulations. Encourage, but do not force, children to eat unfamiliar foods. The junior counselor may not have pop or snack foods at the lunch table.

About 11:35 the children who ride will line up at the door and wait to be escorted back to their rooms. On arrival, one junior counselor may be asked to pick up the older children's snacks from the computer room.

During the snack period, the junior counselor will assist in supervising the disposal of candy wrappers and pop cans by the children. Counselors should not set aside candy or pop for themselves before the children are served. If there is a spill, a junior counselor will clean up. When everyone has been served, a junior counselor should take the cash box with uneaten snacks and pop to the computer room.

There may be an activity period after lunch.

The buses will depart as soon as the children who ride them return from their final trip to the restrooms. Since the vans are too small to take all the children at once, one adult counselor will supervise the waiting

children. Junior counselors should spend this time cleaning the activity rooms and collecting the day's garbage for disposal. Junior counselors should not leave before being dismissed by the adult counselor in charge.

Adult counselors have the right to ask children who misbehave to sit out for five to ten minutes. Junior counselors do not have the authority to punish children and should not ask counselors to do it for them.

The junior counselor should maintain a record of her work hours and turn it in to the camp director at designated times. Should she need to miss work for any reason, she should provide advance notice if possible. On days that she arrives after 7:30 or leaves before 2:30, she should not expect to be paid for the last hour.

There is a day provided at the beginning of the summer to prepare the rooms and a day at the end of the summer to clean and restore them to the order requested by the school. An exit interview may also be requested.

JOB DESCRIPTION

Computer Camp Driver

Term of Employment: Friday, May 30 to Saturday, July 26, 1997 with an Independence Day holiday.

Hourly Rate: Based upon experience and qualifications

Work Schedule: Typically 13 to 18 hours per week, Monday through Friday: 6:30 AM to 7:50 AM and 1:10 PM to 2:20 PM for Camps I and IV; 6:05 AM to 7:50 AM and 1:00 PM to 2:50 PM for Camp II and 6:30 AM to 7:50 AM and 1:00 PM to 2:00 PM for Camp III.

NOTE: The description which follows uses the female pronoun for convenience; however, male and female applicants are equally eligible for this position.

General Description

The computer camp drivers have the responsibility of driving children to and from the computer camp and for communicating with parents. The job of driver may be combined with the job of crafts counselor, recreation counselor, or computer room director. Due to overlap, the hours for the combined jobs are less than the totals for the individual jobs.

She must be properly licensed, meet the requirements of the Children's Center with regard to age and insurability, and have a reputation which will assure that parents will accept her as driver for their children.

Specific Responsibilities

The computer camp driver (henceforth designated as "driver") will furnish the Buckhorn Children's Center with her date of birth and driver's license data.

Prior to the beginning of a computer camp, the driver will obtain from the camp director a map of the route to be driven and a bus schedule. If either of these are unclear, she will ask for clarification. In some cases the driver and camp director will drive the route before hand. The driver will also find out what vehicle she will drive, where it will be parked, and whom she should see daily, if necessary, to receive and return the keys.

At the time specified, the driver will pick up the keys and vehicle, record the starting mileage, and begin her bus run according to the schedule provided.

If a child is not waiting when the van arrives, the driver should stop in a safe location and touch the horn. The van should wait longer for those who attend regularly than for those who attend sporatically.

On the first day, the driver should collect registration slips and donations as each child boards the bus. If a child is not registered and the parent is available, the registration slip may be filled out on the spot. If this is not possible, the child may still attend if the driver is convinced that the parent is aware of what is going on. In such cases, a blank registration slip should be left at the home or sent home with the child at day's end. The parent should be informed that allowing an unregistered child to attend once does not entitle the child to continue to attend if the camp is full.

At the driver's discretion, overnight house guests may attend the camp if they are in the 7 to 12 age range.

The driver has the authority to decide who should sit where. As long as the children handle this without argument there is no reason for the driver to interfere.

When the van arrives at the school, the van should stop before it is surrounded by children. Passengers should remain seated until the door has been opened, after which they should leave the van a row at a time. If children jump up before the van stops, return them to their seats and make them exit last. The driver or a counselor on the ground should supervise the unloading process. On some vans care should be taken that a child riding in the front seat does not open the front door so it collides with the rear door. It is suggested that the child sitting in the front seat not use the front door.

Care should be taken in backing up after discharging children. Once the children have descended, the van may return for a second bus run or be parked in a designated location. Parked vehicles are to be locked with the windows closed.

At the end of the last activity period, after all children have visited the restroom, the driver will collect her first group of passengers at the door and walk them to her van. She should not reward children who run to the van by letting them board first. If she chooses, she may go alone to the van, unlock the doors, and bring the van to the school sidewalk where a junior counselor will approach with the children. Once the children are on board, she will drive them home, delivering messages at times to parents. She will return to the school, if necessary, for a second load. When all of the children have been taken home, she will park the van at the Children's Center, write down the mileage, and leave the key with the designated person.

Safety

In driving children, safety is far more important than punctuality. In addition to driving courteously and cautiously in accord with state laws, the driver will observe the following general guidelines.

- Children should be transported the shortest possible distance. For example, if one passes a house on the way into a hollow and again on the way out, the child should leave the bus on the way in and board the bus on the way out. An exception may be made if it is safer to board the bus on one side of the road than the other.

- Occupants should remain seated with seatbelts fastened when the vehicle is in motion. Children who remove their seatbelts before the van stops should be kept in their seats until all other children have left the van.

- Vans should not be overloaded. No one should sit on the floor or in anyone else's lap. In some vans there is a space between the back seat and the rear door. Children are not allowed behind the back seat.

- Children should keep their hands and arms inside the van and away from other children.

- There is no reason why children should not relax and converse in the van, and the driver may choose to use the car's audio system; however, the noise level must be low enough so that the driver can hear what is happening behind her and can respond to emergency situations.

- Discourage name-calling. Horseplay should not be tolerated.

- Only the driver, a counselor outside the vehicle, or a responsible child designated by the driver should close doors. Particular care should be taken in closing the front door, because children entering the rear door are apt to grasp the door frame between the doors.

- If the van is equipped with a blinking light, use it when there are children on the van.

An important consideration in driving a van is that a bus offends little when it is late, but it angers many if it departs early. Should the driver run early, she should slow down, stop, and wait in a safe place. As children and parents become accustomed to the bus schedule, the driver will find the run takes less and less time, so she should begin her run later and later to compensate.

No matter how late the bus, the driver should not attempt to drive faster than is prudent, especially on narrow roads. If a single member of the community complains about a van "flying down the road," a significant number of parents may withdraw their children from the program.

The driver should consult the camp director about preventive maintenance and fueling of her vehicle. She should report immediately any problems which she notices. Should she ever feel that there is a problem which renders the vehicle unsafe, she should stop at the first opportunity and phone the Children's Center for assistance.

SONGS

I have no skills as singer or as song leader, but I do sing to the children when I are driving them home in the van. Whatever their artistic merit, these songs will keep children reasonably quiet and will be requested as often as twice a day.

The following were written for a Halloween party. They are in the order of popularity with my children. A 1994 decision of the Supreme Court leads me to believe that these parodies are not a copyright violation of the songs that inspired them. In any event, titles themselves cannot be copyrighted.

Take Me Out to the Graveyard

Take me out to the graveyard.
Dress me up in a shroud.
Give me some bones and an empty crypt.
    We'll form a skeleton partnership
Where it's dig, dig, dig for the sexton
    — Let's hope the ground isn't hard —
For it's two, four, six feet you're down
    In the old graveyard.

Down by the Old Gravestones

(Slowly) Down by the old gravestones
    In the evening gloom,
    There's an empty tomb
    Where the mushrooms bloom.
So get on your broom
And come meet your doom,
    Where you hear moans
    And rattling bones,
Down by the old gravestones.

(The second verse is sung much faster. The parenthetical additions are faster yet and are sung on a sustained note. The fourth line is spoken.)

Down by the old (not the new, but the old) gravestones
In the evening gloom (not the fog, but the gloom).
    There's an empty tomb (not a grave, but a tomb)
    Where the mushrooms bloom. *(spoken)* Did you
        ever see a flower on a mushroom?

So get on your broom (not your mop, but your broom)
And come meet your doom (not eggs, but meat),
Where you hear moans (not groans, but moans)
And rattling bones (not stones, but bones)
(*Slowly again*) Down by the old ([*softly*] not the new,
but the old) grave stones.

A Coffin That's Built for Two

Daisy, Daisy,
Give me your answer true.
I'm half crazy
To go to the grave with you.
They won't sing a *Te Deum*
Outside our mausoleum,
But you'll look fine
With your hand on mine
In a coffin that's built for two.

Elmer, Elmer,
What can a lady do?
I'd can't be there,
Dead in a box with you!
You know that it's not snowing,
The place that you are going,
You'd rattle and shake
And keep me awake
In a coffin that's built for two!

My Bonnie Lies Down in the Graveyard

My Bonnie lies down in the graveyard.
My Bonnie lies under the clay.
My Bonnie lies twenty years buried,
So why won't she bide where she lay?

Chorus: Go back, go back,
Go back to the graveyard and lay, I say.
Go back, go back,
Go back to the graveyard and stay!

Whenever I go to a movie
Or stop at my mother's for tea,
She always comes in to remove me.
Oh, think what you're doing to me.

Chorus: Go back...

Ghosts

There are ghosts who make you quiver.
There are ghosts who make you quail.
There are ghosts who send a nervous shiver
Up your spine and cause your heart to fail.
There are ghosts who hide in shadows near you,
Those who touch your shoulder suddenly,
But the ghost who turns my heart to Jello
Is the ghost who's in love with me!

Home in the Hall

Oh, give me a hall
With a rat in the wall,
And a bat swoops about in the air,
Where the floorboards all creak
And hobgoblins squeak
To a gibbering shape on the stair.

How often at night
Has a flickering light
Seemed to wander from window to door,
But the brave ones all say
That at dawn the next day,
There's no track in the dust on the floor.

Chorus: Oh, give me a hall...

In the same tasteless mood as mine are Tom Lehrer songs from the 50's such as "I Hold Your Hand in Mine," the "Irish Folk Song," and "Poisoning the

Pigeons in the Park." Some, such as "The Old Dope Peddler" and "The Wild West Is Where I Want to Be," aren't as funny as they used to be. Tapes of Lehrer's ditties are sold regularly in the Barnes and Noble's mail order catalog, among other sources.

STORIES

About once a summer we have a crashing thunderstorm, and, even if our power doesn't fail, I turn off the computers. This leaves me with a room full of active children. In desperate times, desperate measures are necessary, and I seat the kids in a circle on the floor and tell them ghost stories. I also use these stories to maintain peace on the van when I am driving.

Entertaining without Frightening

There are those who say it is inappropriate to tell ghost stories to young children. As I say elsewhere in this volume, nothing in the stories I tell is as frightening as what appears every evening on television. The children know that my stories are fiction. Those on television are all too real.

A story that is told differs (or ought to differ) from a story that is read. Storytelling is a deliberate process, where every word carries weight. Descriptive passages that set the mood when read may put you to sleep when spoken. A ghost story should get to the point quickly and incisively.

Although I tell a few stories that are either my own altogether or so altered from the original as to be mine now, I have never hesitated to tell the stories of others. I move the stories from their author's locale to eastern Kentucky, where my camp is located. Common last names here are Combs, Abner, McIntosh, and Stamper, to name a few, so casual characters in my tales may be named Combs, Abner, McIntosh, or Stamper; however, I don't use these names for villains and victims.

Many of my tales are told in the first person, as if they happened to me. I don't warn the kids that I am doing this when I begin, but after I finish, I'll say: "Do you believe that? Of course not!" With one exception, Poe's "Telltale Heart," I am a victim or observer in my tales, not the villain. To isolate the children a little from the stories, I move my ghosts to the Civil War era, a long time ago in a child's mind.

There are a number of written short stories and folk tales that adapt well to story telling, but it makes sense to find tales from the oral tradition when possible. In my case I use two books by Ruth Ann Musick, "The Telltale Lilac Bush," and "Coffin Hollow." Beginning in 1946, Dr. Musick and, later, her students gathered hundreds of stories from persons who claimed to have seen an

apparition themselves or heard of it from the person to whom it happened. Appendices to the nearly two hundred tales in her books list names of the persons providing the accounts and something of the circumstances.

Since the majority of Musick's tales were gathered using a tape recorder, they have the requisite brevity of the oral tradition and can be read without change by those who don't enjoy telling a tale themselves; however, they are also easy to remember in a form adapted in time and place to local needs. I have been telling some of her tales for over a decade without looking at her books, and these stories are quite different now from the originals.

A characteristic of many of the Musick stories is their lack of formal literary qualities. As histories, rather than stories, they often end abruptly without explaining everything or having a conclusion, happy or otherwise. In some cases I simply say: "...and that's all I know about it." Other times I have supplied my own ending or explanation of the phenomenon. It is perfectly acceptable to ask the children what they think happened next.

As Musick points out, there are common motifs in short ghost stories, and, rather than fight repetitions, I try to use them to create a pattern continuing from tale to tale. Thus the tension heightens any time I mention a lonely house or a girl in a long white dress, because the latter is always a ghost and the former is invariably haunted.

At the end of this section is a list of stories I have found effective, together with references where they can be found. If you like ghost stories, as I do, it will be up to you to move the tales to your own locale. The stories are classified by length, although your editorial process may result in a tale longer or shorter than mine.

SOME TALES

Here's a moderately long tale that I made up to tell the kids.

The Boy and the Bear

Many years ago a man was having trouble making a living in Cincinnati, so he moved his wife and family to a farm up a hollow in Kentucky. They didn't have much money, but their Daddy said they'd do all right if they worked hard. The kids didn't know any other kids living nearby, so they were tickled when school was announced and their Daddy told them they could go.

"I'll go with you, if you like," he said on the first morning, "Or can you find the school?"

"Sure, Paw," said the oldest girl. "We go straight down the path, cross the first little bridge, go through the woods, cross the second little bridge to the town and there's the school."

"Well, go along, then!" said their Daddy, and off they went.

They'd gone about a quarter mile down the path and were out of sight of their house when they came to the first little bridge. Sitting on a stump on the other side was a little boy about seven years old that they'd never seen before. He stood up as they came across. "Goin' to school?" he asked. "So 'm I."

"Who are you?" they asked.

"I'm Calvin," he replied. "I live up that-a-way," and he pointed up an path that came into the main path below the bridge. The kids exchanged names and went on down the hollow through the woods. When they came to the second bridge, Calvin turned off. "My school's down this branch a piece," he explained, "but I'll see you later." The other children waved goodbye and went across the bridge to their own school.

When school was out and they returned, there was Calvin at the bridge, waiting for them. "Le's go," he said, and together they climbed back up through the woods to the upper bridge, where Calvin took his own path home.

For the next couple weeks the children walked to school together every morning and home every evening. Calvin always met them at one bridge and turned off at the other. Once they wanted to go to his house to play, but their mother said: "No, I don't know those folks. Wait'll I get the cannin' done, and we'll go visitin'."

One morning the children got to the bridge a little early, and Calvin wasn't there. They shrugged and started down the path. They'd gotten about a hundred yards when they heard Calvin running up behind them. "Don't you never go without me agin," he exclaimed, and he made them promise that they would wait the next time. "He's only a little fella," they thought, "and feared to go by hisself."

Just the same, when the children arrived even earlier a week later, they only stood at the bridge a minute or two before going on down the hollow and

into the woods without Calvin. They'd gotten under some thick trees when they heard some noise in the underbrush, and out came a big she-bear. The bear went up on her hind legs, and the children turned and fled up the path the way they had come. After a few moments, the she-bear lumbered after them. They were hurrying and she wasn't, but she was bigger than they were and faster, and she began to catch up as they got tired.

Just then, down the path, hootin' and hollerin', came Calvin. He ran straight by the astonished children and up to the bear, who stopped and went up on her hind legs again, growling. For a moment the bear and the boy stared at each other, and then Calvin shouted "Git!" The bear turned, dropped down on four legs, and ran back into the woods.

The children came up, excited and shouting. "If I'd knowed what a coward that ol' bear was," exclaimed the oldest boy, "I'd have run her off myself!"

"Remember," said Calvin. "Don't you never go to school without me." Together they went on to school, and afterward they returned up the path together as usual.

The kids told the tale to their Daddy when they got home, and he got out his gun. "Can't have no bear scarin' my kids," said he, and they went back down the path together. There was no sign of Calvin when they crossed the bridge. They'd just gotten into the woods when they encountered the she-bear. Up went the bear, up went the gun, and "Bang!" the bear was dead. The father looked at the ground nearby. "Lots of prints," he said, "and all hers. I reckon she's alone, and you'll be all right from now on."

"I believe I'll go in town for some help with that carcass," he said, and together they went out of the woods, across the bridge, and into town. A man at the trading post there promised to take care of the bear, and they began the walk back. When they crossed the lower bridge, the father looked down the narrow path that joined the main path there. "Let's go look at that other school," he said.

A hundred yards down the path they came to an old, falling apart schoolhouse. The roof was gone, the door hung on one hinge, and there was a tree growing through the floor where there had once been a classroom. A rusted out, potbelly stove stood in the middle. "This can't be it," said the kids. "The path doesn't go any further," answered their Daddy.

Back they went to the main path and on up through the woods. When they came to the second bridge, their Daddy turned off again. Again they followed a

path, which got fainter and fainter until it came out on a ridge, where an old chimney was all that remained of a house that had been there years ago. Above the house was a cemetary with old tombstones, covered with moss, including one that read "Calvin Adams, 1844 - 1853." "Maybe Calvin was named after him," said the oldest girl, but their Daddy just shook his head.

The father was of two minds whether to let them go alone to school the next morning, but they persuaded him. "That ol' bear's dead," they said, "and Calvin will be lookin' for us."

"Go ahead," said their Daddy.

Calvin was waiting at the bridge. "Let's go," said the kids.

"Can't," said Calvin. "The bear'll get me."

"What are you talking about?" asked one of the boys. "That dumb bear was afeared of you, and, besides, our Paw shot her. She's a dead'un, now!"

"I know." said Calvin. "Yesterday, that bear was afraid of me, because she knew I was a ghost. Now, she's a ghost, too, and she's got a score to settle with me. No, I don't think I'll be going to school anymore." He turned and went back up the worn path. Somehow, before he got around the bend, they couldn't make him out, and, indeed, they never saw him again.

The Haunted Farm

NOTE: I regard this shorter tale as mine, because I have altered it so much that little but the last two lines remain from the original, which I read somewhere many years ago. It starts very slow, but builds to a fast-paced conclusion.

A newcomer to a region heard that a farm was for sale and asked an acquaintance if he should buy it.

"I wouldn't," said the friend, "the farm next to it is haunted."

"The farm is haunted, you say?" asked the newcomer.

"Not the farm that's for sale... the one next to it."

"That won't bother me," said the newcomer. "I won't go on it, and I don't believe in ghosts, anyway."

So, he bought the farm that was for sale and was so busy fixing things up and trying to get a crop started that he never thought about the farm next door.

A few months went by, and he was up on a back field working. It was hot, and he was thirsty. He looked across his fence and saw an apple tree on the farm next door. The apples looked really good.

He remembered what he'd been told about the haunted farm, but it was a bright, sunny day, he was thirsty, and he decided that there was no harm in getting himself an apple. He went over to the fence, hurried to the tree, took the first apple he came to, ran back, and climbed back to his own side of the fence. Then he ate the apple. It was pretty good, and he decided he wanted another.

This time he wasn't so nervous. He went over the fence slowly, walked slowly to the tree, and circled it twice before picking the two biggest apples he could reach. He began eating one as he walked back to his own land. These apples were good, too.

"Ghosts!" he thought. "That's nonsense! Why, living next to a farm that's supposed to be haunted is like getting two farms for the price of one."

He went down to his barn and hitched his horse to a wagon, which he pulled up to the fence by the apple tree. Then he picked several bushels of apples, took them to town, and sold them.

"This is a good deal," he thought, and from then on, when he saw something he wanted on the haunted farm, he walked over and took it. This went on for several weeks.

One Saturday, he was finishing his chores and although the sun was setting, it was still light. "I wonder," he said, "what's in the farm house over there?"

No sooner had he thought that, then he went over the fence from his place and walked to the farmhouse. The door was locked, and he decided not to force it open. That, he decided, would be too much like stealing. From the porch, he looked across the farmyard at the barn. "I believe the barn door is open," he said to himself.

He walked across, and, sure enough, had no trouble opening the door. It was pretty dark inside the barn, especially so late in the day, but after his eyes adjusted to the dark, he saw the barn was full of all kinds of things. He walked to the opposite wall and lifted a saddle down from a peg on the wall. "Pretty good!" he thought.

Just then someone tapped him on the shoulder. He turned around, and saw an old farmer standing there. What is more, even though the farmer was between him and the door, he could still look out the door. In fact, he was looking right through the farmer! Right then he discovered that he believed in ghosts.

He turned, hung the saddle back on the peg and took a giant step to the right. Then he ran past the farmer out the door. He ran across the barnyard and came to a fence, but he didn't stop for the fence, he went right over it and found himself in a pasture with a bull, but he didn't wait for the bull, he ran right across the pasture until he came to a fence, but he didn't stop for the fence, he went right over it and came to a hill, but he didn't stop for the hill, he ran right over the hill and down to another fence, but he didn't stop for the fence, he went right over it and found himself in an alfalfa clover field, but he didn't stop for the alfalfa clover, he ran right through it and came to another fence, but he didn't stop for the fence, he went right over it and came to a swamp, but he didn't stop for the swamp, he ran straight through it and fell down and got up again and came to a creek, but he didn't stop for the creek, he ran straight through it and came to a fence, but he didn't stop for the fence, he went over it and came to a corn field, but he didn't stop for the corn, he ran through it and came to another fence, but he didn't stop for the fence, he went over it and found himself in a barnyard, where there was a pig sty. By now he was feeling a little tired, so he jumped into the sty and hunkered down next to a sow, breathing hard.

Just then someone tapped him on the shoulder, and he looked up, and there was the old farmer again.

"We was really goin' there for a spell, warn't we?" asked the farmer.

"Yes," said he, puffing, "and if you'll give me a minute to catch my breath, we'll really be goin' again!"

Kennedy Sue

Here is another one of my tales, inspired by a Ruth Ann Musick original.

A peddler had just arrived at the outside edge of Chavies one evening when a woman in a white dress stopped him. She was pale and looked ill. She asked if he could give her a ride into town.

The peddler was nervous about taking up with a woman in a strange town, but she looked so sick he couldn't refuse. He helped her to sit sideways in front of him on his mule, and they went on down the road. She leaned against him, and, almost immediately, went to sleep. He didn't disturb her.

When they came to the general store, he shook her and said, "We're here," but she didn't move. Supporting her as best he could, he managed to get off the mule, lifted her down, and laid her on the bench in front of the store. When he looked at her closely, he decided she was dead.

He ran into the store. "Come outside," he cried. "There's a sick woman here, and she may be dead." Two of the men in the store ran outside to see.

After a moment they came back, unexcited. "It's only Kennedy Sue," one of them said.

"But she's dead!" exclaimed the peddler.

"Of course, she's dead," said the man. "It's Kennedy Sue."

The peddler was dazed. "I don't understand," he said.

"That's Kennedy Sue," explained the proprietor. "She's buried in the cemetary on the edge of town, but she don't like it there. Every now and agin, she takes it into her head to get up and catch a ride into town, but she ain't got no stamina. She's always dead when she gets here, and her people have to bury her agin."

After that the peddler quit giving rides to strange women.

The Living Corpse

That was my version. Here's Musick's story. It's number 76 in "Coffin Hollow:"

A young man riding home on horseback was delayed so that he had to travel at night. On his way he had to pass a cemetery. Since he was traveling by himself, he was somewhat uneasy and frightened.

All at once he came upon a young woman sitting beside the road crying. He stopped and asked if he could help. She told him she had been walking all night, trying to get to town. She was so tired and weak she could not go on.

He told her he would be glad to help her. He lifted her up on the black stallion, and they galloped toward town. Steadying the woman on the horse with one hand and holding the reins with the other, the man soon became tired, as the woman seemed to get heavier and heavier.

When he arrived in town, he got off the horse to help the young woman down -- and realized that she was a corpse.

The townspeople at the inn told him that every year on the anniversary of her death this woman rose from her grave, and her family then reburied her.

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I make no claim that my tale is an improvement over Musick's, but some of the differences are significant. Mine is told for amusement, while she received hers as a true account. In any event, I have fallen into my mode of telling it, I tell it better for having adapted it, and my adaptation will not frighten anyone.

You don't like ghost stories? O.K., you keep them quiet.

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He was a bright little boy, always in motion and popular with the others at computer camp. When I asked his sister about him the following year, I was distressed to find that he was dead. "What happened?" I asked. The response was all too familiar. His father had an automatic pistol in the house. While the father was in the room, the boy found the gun and lifted it from where it lay. He pulled on the trigger, and before he could let it go, had shot himself three times and his father once. He died instantly. The father survived.

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Eastern Kentucky has a reputation for violence, especially if one wanders too far off the beaten track. You are less likely than formerly to find a moonshine still here, but in 1993 Kentucky ranked second among the states in confiscated marijuana plants. If you roam the mountains, you may end up in someone's pot patch, a distinctly unsafe place to be.

When I first arrived in the mountains, another outsider told me to stay in town and not walk about alone. Today that sounds ludicrous, but in 1973 I took it seriously. Years later I mentioned the advice I'd been given to a local man. "You've nothing to worry about," said he, adding half seriously, "We only shoot federal agents and relatives."

GETTING NOWHERE FROM ANYWHERE

I am often asked how I happen to be running a program in Buckhorn, Kentucky. I'll tell you, but I plan to ramble, so skip this section if you really don't want to know.

It is inaccurate to say that Buckhorn is nowhere. The city was incorporated in 1996, better maps of the Commonwealth show a bend in state Route 28 near a dam in the Middle Fork of the Kentucky River, and at the bend is a dot labelled "Buckhorn." Besides the bend shown on the map, there are a great many others, so that driving twenty-nine miles to Hazard, the seat of Perry County, takes forty-five minutes, more if you get behind a coal truck. Three other county seats are closer. Kentucky doesn't have many natural resources besides coal, but it yields to few other states in the number of counties.

A county road comes into Buckhorn behind the general store. A Republican governor in this traditionally Democratic state promised, if elected, to pave roads. He was, and he did, but the roads weren't widened in the process, so there are many asphalt roads through the mountains that are too narrow for cars to pass, with the result that drivers brake and accelerate as visibility and temperament dictate. When cars approach one another, the newer car pulls on to whatever shoulder is available while the older car edges by. Cars back up for school buses. Buses back up for coal and log trucks.

As you drive the Squabble Creek road east from Buckhorn, the road rises gently with the mountain on the right and narrow fields, houses, and the creek on the left. Fifteen minutes later the houses stop, and, until five years ago, so did the pavement; however, in 1988, the county judge executive decided that the schoolchildren from "little Leatherwood" at the far end of the road, nine miles and two mountains away, should be within an hour's drive of their school at Buckhorn, so now the one-lane pavement continues.

Nevertheless, where the Squabble Creek houses end, we will take a left turn on to a gravel road and cross the creek across a large culvert to follow the Otter

Creek Road over another mountain and down to Otter Creek itself, where it flows toward the Kentucky River above the Buckhorn Dam, a few hundred yards up the lake from the mouth of Squabble Creek. Forty years ago, Otter Creek and Squabble Creek were equally accessible from the road along the river. Now there is a lake where that road used to be and Otter Creek is 25 minutes away.

When I first came to Kentucky in 1973, there was a one-room schoolhouse in session at the point where the Otter Creek Road strikes Otter Creek. The schoolhouse was remodelled as a church about 1976 and rebuilt as a home about 1978. Although people live up and down Otter Creek five to ten minutes away, the old schoolhouse offers some claim to being "nowhere," but even this is subject to challenge.

About ten years ago, a group of volunteers came from Michigan to Morris Fork, one mountain west of Buckhorn, to work at a church there. One of the church members took them to Otter Creek to allow them to see the back side of the mountain, ending at the home that had been a schoolhouse. As the Michigan visitors were sitting in their car, a boy came out of the house. "I can't believe it," said the visitor, "That's my grandson!" So it was. An estranged wife had moved to Kentucky with the children, where her ex-father-in-law encountered her unexpectedly. If Otter Creek is this side of nowhere, Buckhorn must be, too.

In 1970, after a stint in the Army and four years working with explosives in Florida, I was teaching physics and math in Pennsylvania at the Bradford campus of the University of Pittsburgh. I'd been there three years and had decided that I wanted to stay in teaching. There's no future for college teachers without the PhD, but when I told the university I was returning to graduate school, they told me they couldn't use me full time that summer. Rather than work part time, I decided to spend the summer doing something different and applied to the Volunteers in Mission (VIM) program administrated by the United Presbyterian Church in the USA (UPUSA), who sent me to California, where I spent 13 weeks as a substitute house parent at a center for young, hyperactive, aggressive children. Then I went off to school at the University of Florida.

The following summer I was intent on passing my doctoral qualifying exams, so I stayed in Florida, but I was ready for a break in 1972 and applied for another VIM assignment. The place in California was only taking women who wanted to be lifeguards, and I was neither, so I ended up in Kansas City, Kansas,

living in a children's home, where I got breakfast and a bed in return for running their recreation room in the mornings, while I spent the afternoon supervising a playground at the edge of ahousing project. Like Christy, in Catherine Marshall's book of that name, I learned how to walk surrounded by ten preschoolers, each clutching tightly to one of my fingers.

About once a week we went on field trips. These could be hair-raising. I broke up a knife fight once when we went to the ball park, and Kansas City was losing badly, but the most difficult situation I encountered occurred on a swiming trip. My bus load of children consisted, typically, of thirty black kids and three or four white kids. The pool was in the middle of the Kansas City ghetto, because the city had responded to integration orders by filling every other pool with concrete. At quitting time, following a dispute with some older, black girls in the locker room, two white ten-year-old girls, rather than ride the bus, left the pool in their bathing suits to walk home, a distance of about eight miles. By the time I found out what had happened, they were a block away, not responding to my orders to return.

The bus driver was willing to try to drive after them, but the girls promptly disappeared down a one-way street in the wrong direction. I sent the bus on its way and called a taxi, in which I cruised the streets, back and forth, before finally locating the children a mile from the pool. By then they were tired enough to come to the cab, and I drove them home. Neither they nor their parents considered the incident a big deal, and the streets they walked were probably as safe as the one in front of their house, but I was still relieved to see them. After that I spent the lunch hour walking the row houses where they lived so they would know and trust me the next time I called to them.

In 1973 the VIM program sent me to the Buckhorn Children's Center, where I worked with a tutor, a recreation director, and four other volunteers to provide daily activities for children in residence there. Our daily schedule included two hours of work, two hours of tutoring, four hours of recreation, supervision at luncheon and supper, and dish-washing.

The next two summers the VIM program returned me to Buckhorn, where there was a change in directors at the Children's Center and some changes in the program, but my duties were similar. By the fourth year, 1976, I was no longer bothering to send applications to the VIM people. I just drove to Buckhorn. By

then I had completed my doctoral degree and was teaching at the University of Tennessee at Chattanooga, an easy six-hour drive from Buckhorn, so I was visiting there at Halloween, before Christmas, during my spring break, and at Easter.

There was a major change in 1976. With as few as nine children on campus and a dormitory closed for restoration, Andy Chalmers, Director of the Children's Center, decided to conduct a summer recreation program for the community. There was no charge. The camp was conducted four days a week and lasted six weeks. I conducted recreation and crafts sessions in the mornings with 12 to 14 year olds, then went with the majority of the campers to a beach on the Buckhorn Lake, where I taught many children water survival skills: they learned to float on their backs and to swim, not dog-paddle, with their faces in the water.

There was a new director in 1977, and I was assigned to work with the teenagers at the older boys' dormitory, although I continued to drive a van for the community summer program, which continued.

Although my Dean at the University had agreed to my summers in Kentucky, he had stipulated that I spend one summer out of five practicing my engineering skills, so my Buckhorn time in 1978 was limited to a ten-day session as a substitute house parent at one of the dormitories. Following that, I travelled to Haiti where I helped the Methodist Church there by surveying the path of a water line, repairing one wind-driven generator, and diagnosing problems with another. I rose at cock crow (noisy critters), worked a long morning, slept through the heat of the day, and worked again until it was dark and time to go to bed. If you want to see true poverty, go to Haiti. Better yet, stay home and send the money you would have spent to go see for yourself.

Having lost a year as a VIM volunteer, knowing that the Buckhorn summer program was now four weeks long, and that it began in July, I wrote to the VIM folks in 1979 to ask if they had an assignment for me in May and June, after which I could go on to Kentucky. They sent me to Bingle Memorial Camp outside Fairbanks. I spent more time preparing the camp after the ravages of an Alaskan winter than I did supervising campers, but I was there for two one-week sessions. I flew back to Buckhorn where I spent the summer driving a van, serving as substitute house parent, and helping in the summer program.

Leaving her job at the school, where she had worked for many years, she had taken on a volunteer post at a nearby church school. When she retired a second time, a roomful of co-workers, children, and grandchildren had gathered in the church's community building for the occasion. Someone ordered a large decorated sheet-cake, and the next morning there was still enough cake for the adult Sunday School class.

"Those are pretty expensive," said one member. Others agreed, and estimates ranged as high as $50. Curiosity fueled a search in the waste basket, where the original cake box was found, still bearing its $29-dollar price tag. As the ladies looked on in surprise, Harlan proposed his solution: "Reckon they got it used?"

AN AFTERWORD

Neither this book nor the camps that it describes would have been possible without the help of others. My primary purpose is to say "Thank you," but readers from outside the community may learn from this list how many persons can be involved in a computer camp over a 13-year period.

Charles Baker, Director of the Presbyterian Child Welfare Agency (PCWA), was a source of cheerful moral and financial support. The PCWA, which incorporates the Buckhorn Children's Center, my primary sponsor for over a decade, hired recreation and crafts counselors, junior counselors, and drivers, while providing my housing, snacks and hot meals for the children, vans for transportation, computer equipment and software, secretarial support, and bookkeeping. Even this long list is incomplete.

After the 1985 camp, Dennis P. Wooton, principal of the Buckhorn School, offered to contact the Perry County School Board for permission to hold future camps at his school. The Board agreed, and both camp and school have benefited since from a continuous, cooperative relationship. Among other things, the school has provided secure facilities for the computer room, meeting rooms for crafts and recreation, restrooms, meals, annual loans of computers, lists of children's names and ages with assistance in contacting parents, and cooperative use of transportation and facilities during simultaneous sessions of the camp and summer school.

The Buckhorn Lake Area Church (Presbyterian) has been a primary sponsor since 1988. The church's Session has permitted me to drive their van daily for ten summers of hard use on narrow, rutted mountain roads. Pastor Jack Henshaw visited the camp many times, recorded activities on video tape, and edited the tapes for my use. Following Jack's retirement, interim minister Art Pflug continued the church's support, driving the church van daily for periods as long as two weeks when the camp needed an extra driver. Members Eva Mae Combs and Harlan Riley also drove the church van to camp on occasion. Earnest Walls, the most recent pastor, has continued the church's involvement.

I am grateful to my crafts counselors, Kim Johnson, Sandy Smith, Vanessa Stamper, Tammy Turner, and Toi Turner, for their inventiveness and dedication, coupled with a knack of making children love them and want to do their wishes.

I could not have operated without my recreation counselors, John Vernon Gay, John Noble, James Pauline, Carolyn Sandlin, Charlie Stamper, Joyce Stamper, and Billy Adams, who stayed cool and kept the children busy on hot summer days.

I was assisted in the computer room by Billy Adams, J.D. Bentley, Sherry Eades, Brett Mann, Doug Tzanetos, and Cindy Rae Wooton, all of whom became adept at handling a multitude of simultaneous cries for help. Doug was also kind enough to review this manuscript and made many helpful suggestions. I would have had difficulty with my 1986 camp had J. D. not been there to teach me about and handle the Tandy computers.

I have received valuable assistance over the years from junior counselors, Mervin Blanton, Kathy Jo Carnes, Monica Combs, Bill Davis, Olivia Griffith, Debbie Holmes, Lisa Mayes, Tammy Solomon, Martin Stacy, Charlie Stewart, Anthony Turner, Joy Turner, and Tim Wooton, who struggled with the difficult task of acting like an adult while still a teenager. Many of the women have since married and changed their last names.

During my first computer camp, Kim and Tricia came from Cincinnati as volunteers to help. Their surnames have disappeared from my memory, but I have no trouble recalling their success engaging the children outside the computer room. Dodie Combs Gilbert and Vicki Helton Hollan assisted me for a short time during the 1986 camp.

Many people at the Buckhorn Children's Center responded to my requests for help. Virginia Helton has gone with me for several years to visit parents and recruit children in nearby Breathitt County. She and Mary Cantrell also made arrangements so that siblings of children at the Buckhorn Montessori School could be transported to and from the camp in Montessori vans. Faye Combs answered countless phone inquiries, Robin Gabbard assisted in contacting local newspapers, Sue MacIntosh handled the money that was turned in to me, and Joy Stamper completed the paperwork for the food service program. Many friends prepared food and snacks, among them Emma Stamper, Frances Turner, and Betty Wooton. Linda Witt recruited for me in Wolfe County. Jeff Gabbard gave activity schedules and advice to my recreation counselors, while Bill Allmond spent several days observing and assisting the recreation program. In addition to providing me with supervision and counseling, Jerry Cantrell, Tony Cecil, Vicki Kloth, Perry McCullough, Marty Sharp, and Rebecca Sharp hired and trained my counselors. Sally Baker saw to it that I had housing, located places for camp supplies to be stored from one summer to the next, and was often the person to whom I turned with requests in emergencies.

Phyllis Day, who directs the Buckhorn Family Resource Youth Service Center, has been invaluable in securing names, addresses, and birthdates of schoolchildren, has assisted me with recruiting, and drove a van for me one summer. Cathy Combs has provided TLC and bandaids in minor medical emergencies, and the Buckhorn Lake Area Clinic provided immediate attention for an asthma attack, a broken arm, and a severe laceration sustained on the playground.

For the last several years the camp has transported children using vans assigned to various cottages at the Buckhorn Children's Center. I would like to acknowledge the cooperation of many cottage houseparents who saw to it that vans had gas and were ready to go, with keys available, early every morning, and cheerfully assented to their daily use on muddy roads despite the inconvenience to cottage schedules. The van of the Buckhorn Montessori School has been made available to me during several emergencies, and I am grateful to Emma Davidson for making that possible.

Two local merchants, H.C. Sparks and Joe Salesman, assisted me by ordering the pop and candy distributed as snacks following lunch every day.

Dr. Ron Cox, Dean of the College of Engineering and Computer Science at The University of Tennessee at Chattanooga (UTC), and my immediate supervisor, Dr. William Gurley, Director of Mechanical, Chemical, and Environmental Engineering, supported my continuous involvement in the Buckhorn community, authorized the use of the College's computers at the camp, and concurred in my application for a one-year study leave to write this book. Janet Wixson, who directs UTC's Center of Excellence for Computer Applications, accepted my recommendation that CECA serve as an annual sponsor for the computer camps and has been a source for camp equipment. Although I received no supplemental pay from UTC during the summer months, CECA sponsorship and the approval of my College made it possible for me to conduct my activities while on official travel from the university, making me eligible for Workman's Compensation and providing professional liability protection. Luckily, I have not needed either.

Like many public universities, The University of Tennessee at Chattanooga does not have a budgetary line for faculty on leave; however, a private source, the University of Chattanooga Foundation, does provide UTC with such funds, and I am grateful to the UC Foundation for their support during my sabbatical year.

Finally, I am grateful to scores of parents and children for welcoming me into their homes and coming to use my computers.